

# S E R V I C E M A N U A L



merrychef

## Mealstream 401

### S E R V I C E M A N U A L

Part No. 32Z3311 Issue No. 8

For all Mealstream 401 models manufactured from January 2001

#### CAUTION MICROWAVE EMISSIONS

**DO NOT BECOME EXPOSED TO EMISSIONS FROM THE MICROWAVE  
GENERATOR OR PARTS CONDUCTING MICROWAVE ENERGY**

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## SAFETY CODE

This manual is designed to assist engineers who have been on a recognised product familiarisation and training course run by Merrychef Limited. It has been prepared to offer technical guidance for the Merrychef Mealstream 401 range of Combination Microwave Ovens.

Please remember that it is wiser **not** to attempt a service task if you are unsure of being able to complete it competently, quickly, and above all **safely**.

To avoid injury to yourself, and to protect the appliance from possible damage, please follow this Safety Code when servicing these ovens.

**Before attempting to repair the oven, check it for microwave leakage.**

**Check that the oven is not emitting microwaves, even when supposedly not in operation.**

**Check that the oven is not operating continuously, whether the display indicates cooking or not.**

**Always discharge the HT capacitors before working on the oven using a suitably insulated 10 MΩ Resistor**

Before removing the rear cover from the oven ensure you do the following:

- Switch off the mains supply and remove the plug from the wall socket.  
or
- If the oven is hard wired, ensure that the power is turned off at the isolator switch.

**Note:** the On/Off switch on the oven is **not** adequate protection against electric shock, as it does not isolate all of the internal wiring from the mains.

Upon completion of a service on a Mealstream 401 oven, or before reconnecting the appliance to the mains supply for testing, check all of the following points:

- All internal electrical connections are correct.
- All wiring insulation is correct and is not touching a sharp edge.
- All Earth connections are electrically and mechanically secure.
- All four door safety interlocks are secure and mechanically sound.
- The door operation is smooth, and the arms run freely in the slots.
- The door activates all four of the door interlock switches **in the correct order**.
- All fuse-holder safety covers are correctly fitted.
- The temperature sensor is correctly connected to the Power PCB.

Before finishing the service call, recheck the following points:

- All of the electronics are functioning correctly, and all of the touch pads are working.
- The turntable is rotating correctly.
- The power output of the oven is correct (see pages 11 & 12 ).
- Microwave emission is below permissible limit - 5 mW/cm<sup>2</sup> (see BS EN 60335-2-90).
- Oven has correct 50mm air gap all round and 150mm above.  
Air flow should not be restricted.

## Product specifications

### ELECTRONIC CONTROLS

**Model Number: RMC1003 + Voltage + Frequency + Current + Controls + Phase**

For example: RMC100345XE52

Model Mealstream 401, 230-240V, 50Hz, 30A, Series 5 Controls, Twin Phase

Model prefix	Voltage	Frequency	Current, Output, Heater	Control Type	Supply Phase
<b>RMC1003</b>	2 = 220-230V a.c. 4 = 230-240V a.c.	5 = 50 Hz 6 = 60 Hz	EE = 13A 700W 1500W	5 = Series 5 controls	2= Twin Phase
			XE = 30A 700W 3000W		
			XX = 30A 1000W 3000W		

### MANUAL CONTROLS

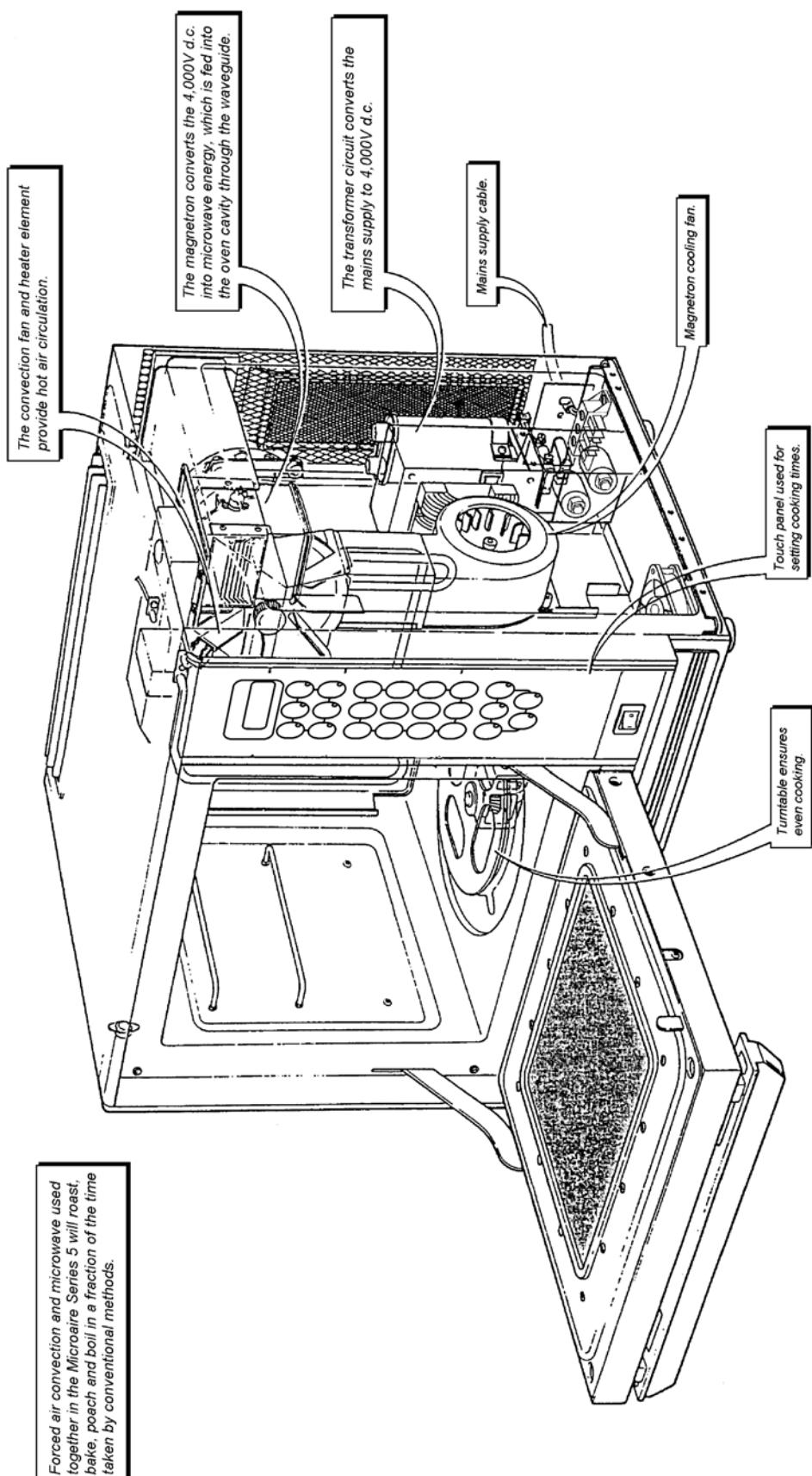
**Model Number: RMC1003 + Voltage + Frequency + Current**

Model prefix	Voltage	Frequency	Current
<b>RMC1003</b>	2 = 220-230V a.c. 4 = 230-240V a.c.	5 = 50 Hz 6 = 60 Hz	CD2 = 13amp XD2 = 30amp

Power Requirements		See RATING PLATE on rear of oven
Power Output	Microwave 100% Convection Combination	700W (IEC 705) 3000W 700W + 1500W (EE) 700W + 3000W (XE) 1000W + 3000W (XX5)
External Dimensions	Height Width Depth	530 mm (Plus 150 mm minimum clearance above) 550 mm (Plus 50 mm minimum clearance each side) 575 mm (Plus 50 mm clearance behind)
Internal Dimensions	Height Width Depth Turntable Capacity	315 mm 330 mm 330 mm 300 mm Diameter 34.3 litres
Weight	Nett Gross packed	All models except XX5 45kg, XX5 55kg All models except XX5 58kg, XX5 68kg
Construction	Cavity Casework	Vitreous Enamel Coated Steel 304 Stainless Steel Anodised Aluminium Extrusions
Settings	Microwave Temperature Timer	100%, 75%, 50%, 25%, Convection only Off, 175°C, 200°C, 225°C, 250°C, 275°C Up to 30 minutes Up to 3 cooking stages of up to 30 minutes each (Programmed)

## Principles of operation

### Principles of Operation

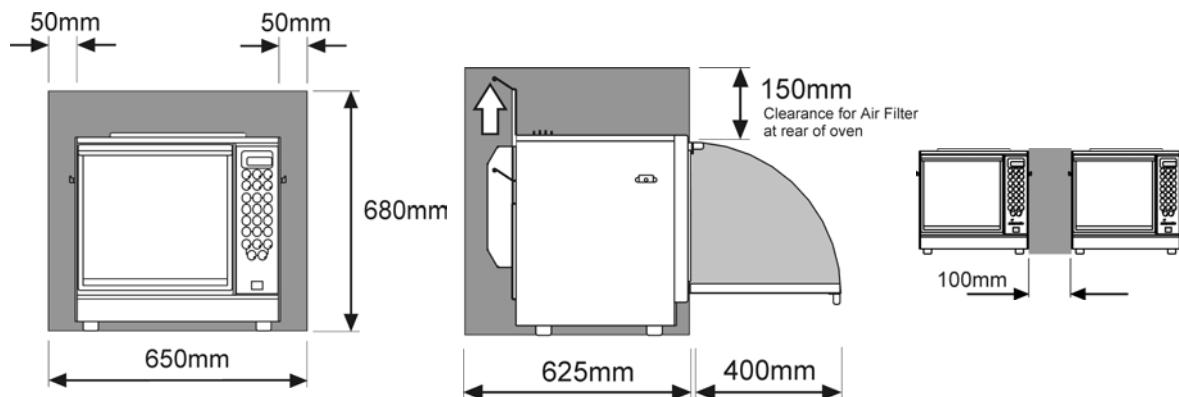


## Installation instructions

### Positioning the Oven

In order to maintain adequate ventilation for air intake and exhaust, and to allow access for cleaning filters, you must allow a minimum of 50mm clearance at the sides and rear of the oven, and at least 150mm above. Air intake temperature should not exceed 35°C.

Excessive temperature will lead to reduced operating duty cycle or premature ageing of internal components.



**NEVER** Install an oven above fryers, grills, griddles or any other major heat source.

**NEVER** Stack machines on top of each other - always use a double stand.

**ALWAYS** Place containers in the cavity carefully - impact damage may chip the vitreous enamel coating.

## Electrical installation:

**WARNING: This appliance must be earthed.**  
**Failure to do so may result in electric shock and death**

**WARNING**



All models ( 30A ) must be connected to a separate electrical supply rated at 30 Amps by a qualified and approved electrician. A suitable 30 amp rated isolating switch with a 3mm contact gap on both poles should be fitted for each oven installed.

Establishments with standard ( Type 'B' ) circuit breakers are sensitive to 'surges' which occur on switching on freezers, refrigerators and other catering equipment, including microwave ovens. Because of this, we strongly recommend that a separate Type 'C' circuit breaker ( designed specifically for this type of equipment ) must be fitted. An individual, suitably rated circuit breaker should be fitted for each oven installed.

Models RMC1003\_EE5, RMC1003\_CD2

The power outlet used must be individually fused. It is essential that the socket is properly installed and earthed. It should be fed from a circuit which is suitable for high power electrical appliances and it is important that this circuit is not overloaded.

Where an approved and fitted moulded plug is supplied we strongly recommend that this plug is never removed.

However certain establishments may require a different plug to be fitted. In this case, the wiring instructions shown should be observed.

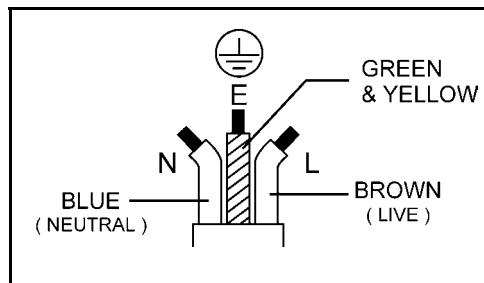


Diagram 1

Models RMC1003\_XE5, RMC1003\_XD, RMC1003\_XX5

When supplied, single phase models are fitted with a Blue 32Amp Plug approved to BS4343. Wiring cable colours as shown in Diagram 1

The Circuit Breaker should be rated at 45A (TypeC).

## TWIN PHASE

Models RMC1003\_XE52, RMC1003\_XX52

The Mealstream 401 oven Twin Phase models should be connected as shown in Diagram 2. The Circuit Breaker should be rated at 45A (TypeC).

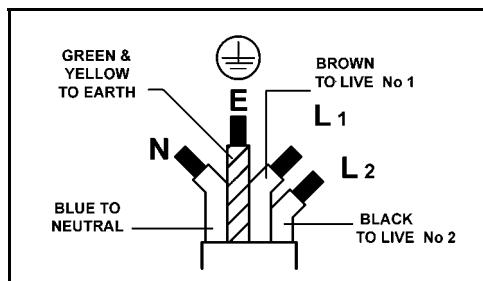
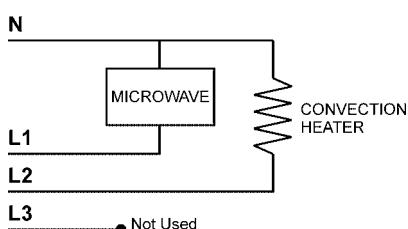


Diagram 2

Simplified loading Diagram

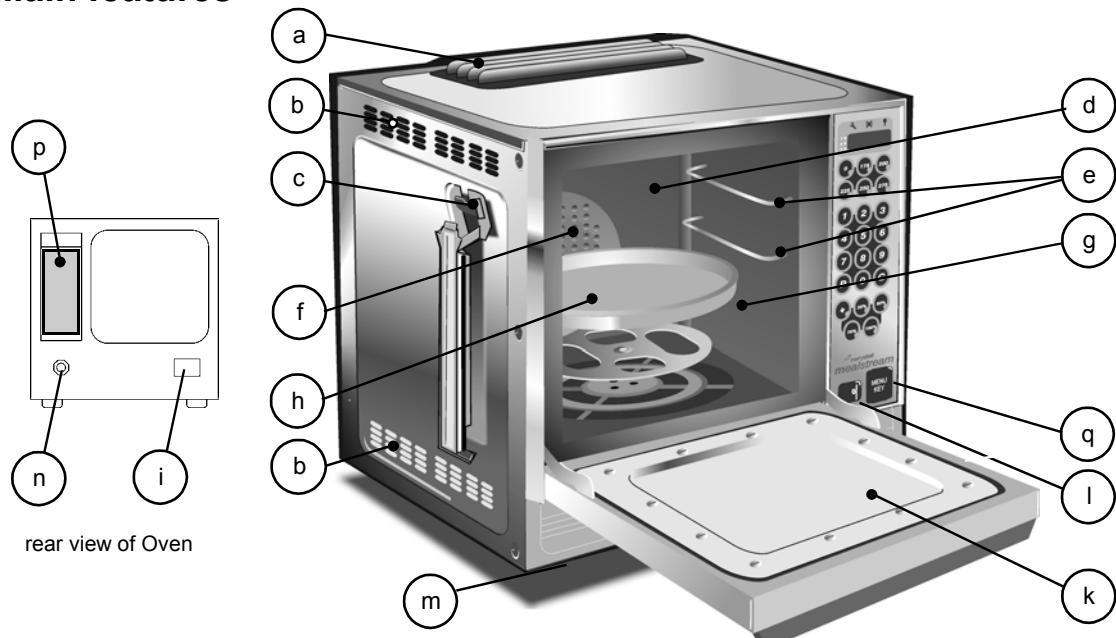


## Error codes and diagnostics

The Mealstream EC401 will identify some of the most common problems by flashing an error message code in the time display window.

Error Message		Possible Cause	Service
		1 Door not fully shut 2 Possible electrical fault	Close door fully. Check Microswitch Door Circuit Check Microswitch Connection to PCB Check Ribbon Cable Check Relay PCB & Logic PCB
	!	1 No time has been set 2 Invalid time has been set 3 Invalid program has been set 4 Number pad failure  5 Memory Failure running a Program	Set a time Set a valid time Use call-back to check program (Menukey: no key downloaded) Membrane key short circuit Re-Program Pad, if fault repeats replace Logic PCB
		1 Oven not heating up 2 Possible Heater circuit fault	Check heater fuse Confirm operation of heater, overheat stat and heater circuit
		1 Oven Cavity overheating	Check cavity sensor Confirm heater relay is operating
	!	1 Oven is not at correct temperature to start program <b>Operator Error !!</b>	Allow oven to reach correct Programmed temperature
	!	1 Magnetron overheating	Check that magnetron cooling fan is working correctly Check air filters Check location and air inlet temperature Note : this will lead to condition shown below
		1 Magnetron has overheated but has now recovered 2 Internal diagnostic fault	Check that magnetron cooling fan and turntable are working correctly Check installation, air inlet temperature and air filters
		1 Oven control area is overheating	Check air filters. Check axial fan Check installation for hot air intake
		MenuKey removed before the download is complete or the process has been interrupted	Switch oven off and begin the MenuKey download again

## Main features



### a STEAM OUTLET

Allows steam and excess pressure to escape from the oven cavity. It must be kept clear.

### b AIR OUTLET

Warm air is vented here. It must be kept clear.

### c TRAY HANDLE RESTS

There is one on each side of the oven for convenient storage of the tray handle.

### d BAFFLE PLATE

Forms the inside rear of the oven and covers the hot air circulation fan. Removable for cleaning by unscrewing the four wing nuts which hold it in place. This must be cleaned on a regular basis, and kept free of debris.

### e RUNNERS

These mounted on each side of the oven cavity to support the rectangular racks or oven trays, and are for use in **Convection mode only**.

### f HOT AIR FAN

Situated behind the baffle plate, and circulates the hot air through the baffle plate, over the heating element, and around the edge of the baffle plate back into the cavity.

### g OVEN CAVITY

The oven cavity is mainly constructed from vitreous enamelled steel panels. It must be kept clean.

### h TURNTABLE TRAY

The vitreous enamelled turntable tray fits onto the turntable disc in the bottom of the oven cavity, and rotates during cooking to ensure an even distribution of microwave energy.

### i AIR INLETS

Additional air inlets are situated along the lower edge of the left-hand side panel, and must not be obstructed.

### j RATING PLATE

The rating plate is situated on the rear of the oven, and states the Model, Serial Number, Electrical Ratings and Manufacturers Tel no.

### k DOOR

The door consists of a thermally insulated inner section, and an additional air gap provided by a twin skinned door front to lower the surface temperature.

### l ON/OFF SWITCH

This is used to turn the oven On or Off.

**IT DOES NOT ISOLATE INTERNAL WIRING FROM THE ELECTRICAL SUPPLY.**

### m FEET

These feet are fitted to ensure adequate airflow under the oven. They must not be removed.

### n ELECTRICAL SUPPLY LEAD

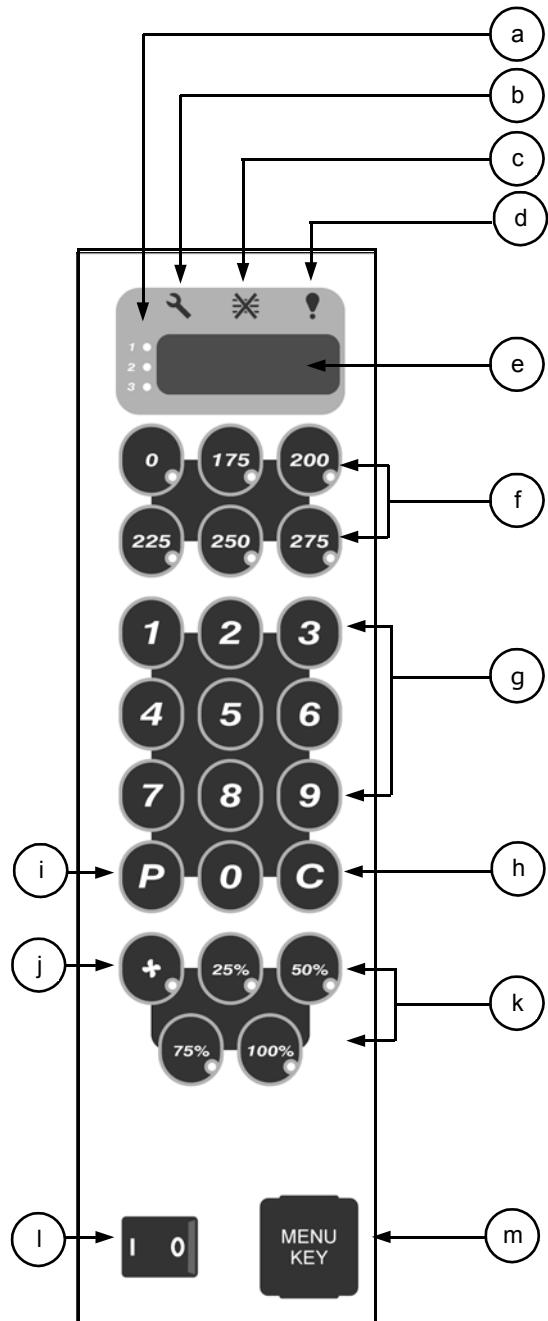
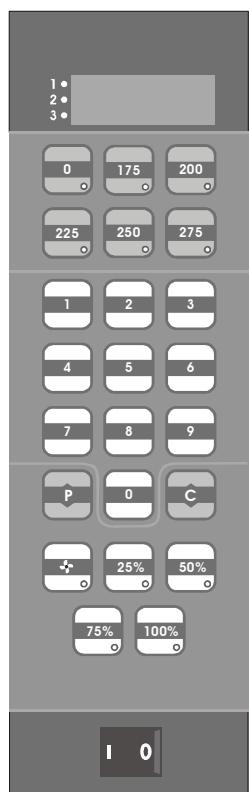
### p AIR FILTER

Main intake for cooling air for internal components. Must be clear of obstructions.

### q MenuKey

## Electronic controls: Mealstream EC401

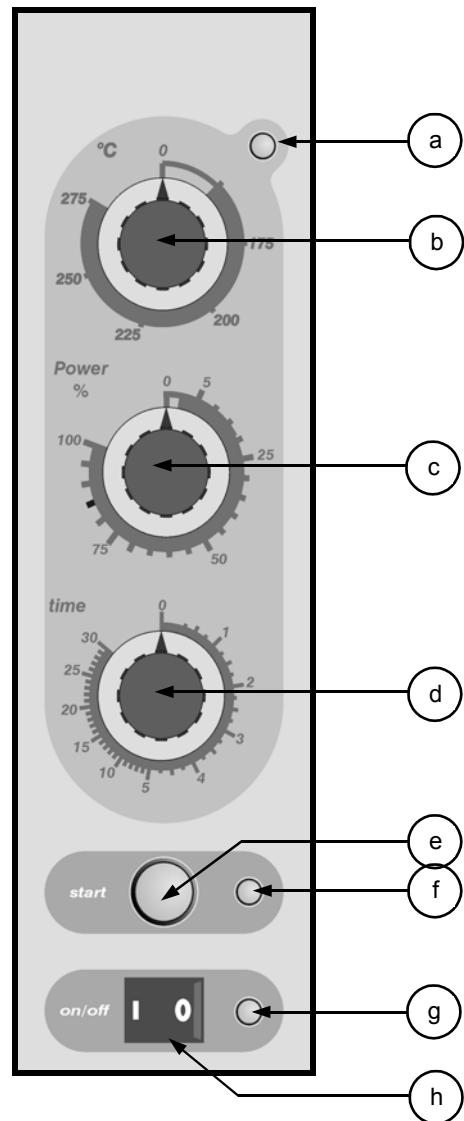
a	Stage LED's
b	Service Indicator
c	Air Filter Block Indicator
d	Operator error indicator
e	Program Display
f	Temperature Set Pads
g	Time / Program Number Pads
h	Cancel/ Callback Pad
i	Program Pad
j	Convection Pad
k	Microwave power Pads
l	On/Off switch
m	MenuKey socket



Starbucks model

## Manual controls: Mealstream RD401

a	Temperature Amber Neon
b	Temperature Control
c	Microwave Power Control
d	Timer
e	Start Pushbutton
f	Cook cycle Red Neon
g	Power Amber Neon
h	On/Off switch



## Procedure A - Power Output Test

### In accordance with BS EN 60335-2-90

This test is given in the BSI test standard for microwave ovens. It is reproduced below - not so that you can follow it, but to show you why it is impractical in normal conditions. A simplified procedure, which gives a good approximation to the BSI power output, is given in Procedure B which follows.

**Note:** This test can only be carried out on a **COLD** oven. If the oven has been operating, even for only a few seconds, the power given will be lower than the oven rating. This test must also be carried out at a stable voltage - the voltage in most kitchens varies considerably even within the period of the test. If the oven has been operating, go to **Procedure B**.

#### You will need:

A thermometer capable of reading to  $\pm 0.1^{\circ}\text{C}$ .  
A cylindrical borosilicate glass container, 190 mm diameter, with a wall thickness of 3 mm or less.  
A calculator.  
A set of scales capable of reading 1 kg to an accuracy of  $\pm 1$  g.  
A glass or plastic stirrer.  
A jug capable of holding over 1 litre of water.  
Drinkable water which is at a temperature of  $10^{\circ}\text{C} \pm 1^{\circ}\text{C}$ .  
A "Variac" or similar variable transformer capable of supplying the oven to ensure a stable voltage.

**WARNING:** *The Borosilicate Glass container has thin walls and is therefore fragile  
- take care not to break it during use.*

#### Method

A cylindrical container of borosilicate glass is used for the test. It has a maximum thickness of 3mm, an external diameter of approximately 190mm and a height of approximately 90mm. The mass of the container is determined.

At the start of the test, the oven and the empty container are at ambient temperature. Potable water having an initial temperature of  $10^{\circ}\text{C} \pm 1^{\circ}\text{C}$  is used for the test. The temperature of the water is measured immediately before it is poured into the container.

A quantity of  $1000\text{g} \pm 5\text{g}$  of water is added to the container and its actual mass obtained. The container is then immediately placed in the middle of the oven on the turntable. The appliance is supplied at rated voltage and operated at the maximum power setting. The time for the water temperature to attain  $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$  is measured. The oven is then switched off and the final water temperature is measured within 60seconds.

#### NOTES

- 1 The water is stirred before its temperature is measured.
- 2 Stirring and measuring devices are to have a low heat capacity.

The microwave power output is calculated from the formula:

$$P = \frac{4.187 M_W (T_2 - T_1) + 0.55 M_C (T_2 - T_0)}{t}$$

where

P is the microwave power output, in watts;  
 $M_W$  is the mass of the water, in grams;  
 $M_C$  is the mass of the container, in grams;  
 $T_0$  is the ambient temperature, in  $^{\circ}\text{C}$ ;  
 $T_1$  is the initial temperature of the water, in  $^{\circ}\text{C}$ ;  
 $T_2$  is the final temperature of the water, in  $^{\circ}\text{C}$ ;  
t is the heating time in seconds, excluding the magnetron filament heat-up time.

## Procedure B - Simplified Power Output Test

### You will need:

A thermometer capable of reading to  $\pm 0.1^\circ\text{C}$ .  
A Polypropylene tray approximately 200 mm x 200 mm.  
A measuring jug.  
A calculator.  
Water which is at a temperature of  $10^\circ\text{C} \pm 2^\circ\text{C}$ .

- 1 Measure 1 litre of cold water into the tray using the measuring jug.
- 2 Measure the water temperature, and record it as  $T[\text{s}]$ .
- 3 Place the tray on the turntable in the oven and close the door.
- 4 Turn the oven on.
- 5 Set the timer to 1:02. ( For Manual controls use a stopwatch set to 1 minute 2 seconds )
- 6 Press the "100%" power pad.
- 7 When the oven beeps, open the door and remove the tray.
- 8 Stir the water thoroughly, and measure its temperature. Record this as  $T[\text{e}]$ .

### Calculation:

- 1  $T[\text{r}] = T[\text{e}] - T[\text{s}]$ .
- 2 Power =  $70 \times T[\text{r}]$ . Power is in Watts.

The power given by the above test should be within  $\pm 10\%$  of the rated power.

## Procedure C - Power Transformer Test

### You will need:

A Digital Multi-meter (D.M.M.)  
A Megger or similar resistance meter using 500V d.c.  
1 Isolate the oven from the mains supply.

**WARNING:** *High voltages and large currents are present at the secondary winding and filament winding of the Power Transformer. It is very dangerous to work near this part when the oven is on. NEVER make any voltage measurements at the High Voltage circuits, including the magnetron filament.*

**WARNING:** *Even when the oven is not cooking, the Power Transformer has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.*

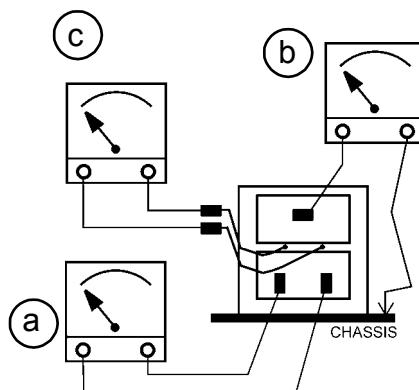
- 2 Ensure that the High Voltage Capacitor is discharged before commencing work.
- 3 Remove all connections from the Power Transformer.
- 4 Using a D.M.M., check the continuity of the windings. Results should be as follows:

a	Mains winding between tags	Approx. $1.3 \Omega$
b	High Voltage winding	Approx. $82 \Omega$
c	Filament winding between terminals	Less than $1 \Omega$

- 5 Using a Megger, test the insulation resistance between:

Primary winding and chassis	Pass if over $10 \text{ M}\Omega$
Filament winding and chassis	Pass if over $10 \text{ M}\Omega$

One end of the High Voltage winding is connected to the chassis, so this is not tested.



## Procedure D - High Voltage Capacitor Test

**You will need:** A Digital Multi-meter (D.M.M.)  
A Megger or similar resistance meter using 500V d.c.

**WARNING:** High voltages and large currents are present at the High Voltage Capacitor. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament.

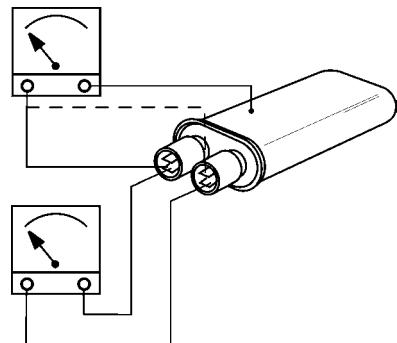
**WARNING:** Even when the oven is not cooking, the High Voltage Capacitor has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the High Voltage Capacitor.
4. Using a D.M.M., check for continuity between the terminals & compare results with table.

Between Terminals	Pass if approximately 10 MΩ
Between Terminals and Case	Pass if open circuit

5. Using a Megger, test the insulation resistance between the terminals and the case.

Between Terminals and Case	Pass if over 100 MΩ
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## Procedure E - High Voltage Rectifier Test

**You will need:**

A Megger or similar resistance meter using 500V d.c.

**WARNING:** High voltages and large currents are present at the High Voltage Rectifier. It is very dangerous to work near this part when the oven is on. **NEVER** make any voltage measurements at the High Voltage circuits, including the magnetron filament.

**WARNING:** Even when the oven is not cooking, the High Voltage Rectifier has High Voltages present because of the Soft Start circuit. Isolate the oven before testing.

1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the High Voltage Rectifier.
4. Using the Megger, test for continuity in both directions. Compare results with the table.

Open Circuit both ways	FAIL
Conducts one way only	PASS
Short Circuit both ways	FAIL
Conducts one way, leaks the other	FAIL

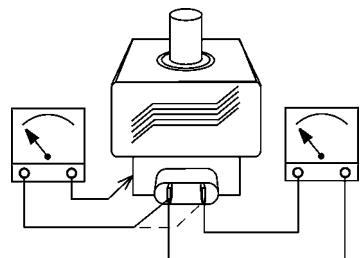
## Procedure F - Magnetron Test

**You will need:**

A Megger or similar resistance meter using 500V d.c.

A Magnetron can be tested for an open filament or a short circuit by carrying out a continuity check.

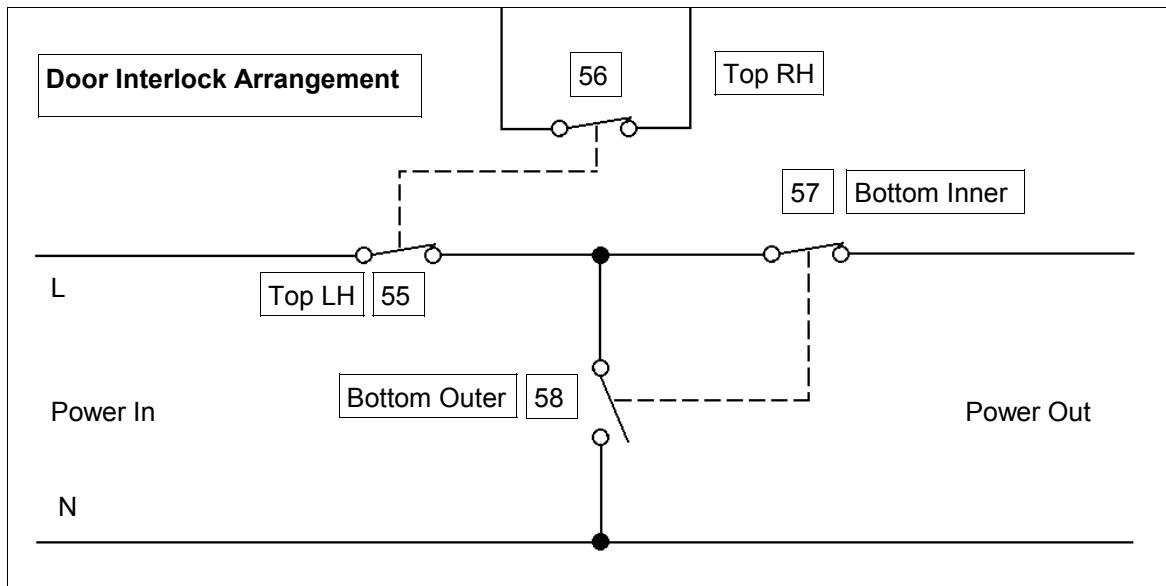
1. Isolate the oven from the mains supply.
2. Ensure that the High Voltage Capacitor is discharged before commencing work.
3. Remove all connections from the Magnetron.
4. A continuity check across the Filament terminals should be 1ohm or less
5. A continuity check between each filament terminal and the metal outer should read open.



## Door interlock operation

The door on the Mealstream 401 oven is monitored by four microswitches. Three of these are used in the conventional "Primary, Secondary and Monitor" switch arrangement shown below, while the fourth is a low-voltage switch linked directly to the control circuitry.

The switches operate as follows:



### 1. Primary Interlock [ 55 , Top Left-Hand ] and Low voltage [ 56 , Top Right-Hand ] Switches

Operate simultaneously. Either will cut off the microwave emissions from the oven when the door is opened: the Primary switch by breaking the mains supply circuit to the transformers, and the Low-Voltage switch by breaking the relay circuit on the Power / Relay PCB.

### 2. Monitor [ 58 , Bottom Outer ] and Secondary Interlock [ 57 , Bottom Inner ] Switches.

Operate simultaneously. The Monitor switch will produce a short circuit across the mains supply if the Primary interlock switch is faulty, thus blowing the microwave fuse and rendering the oven inoperative. The Secondary interlock switch will cut off the microwave emission if all three of the other switches have failed.

**Note:** If operation of the Monitor switch has caused the Microwave Fuse to blow, the Primary and Monitor microswitches must be changed, as they may have been damaged by the high short-circuit currents involved.

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## Error Light Operation

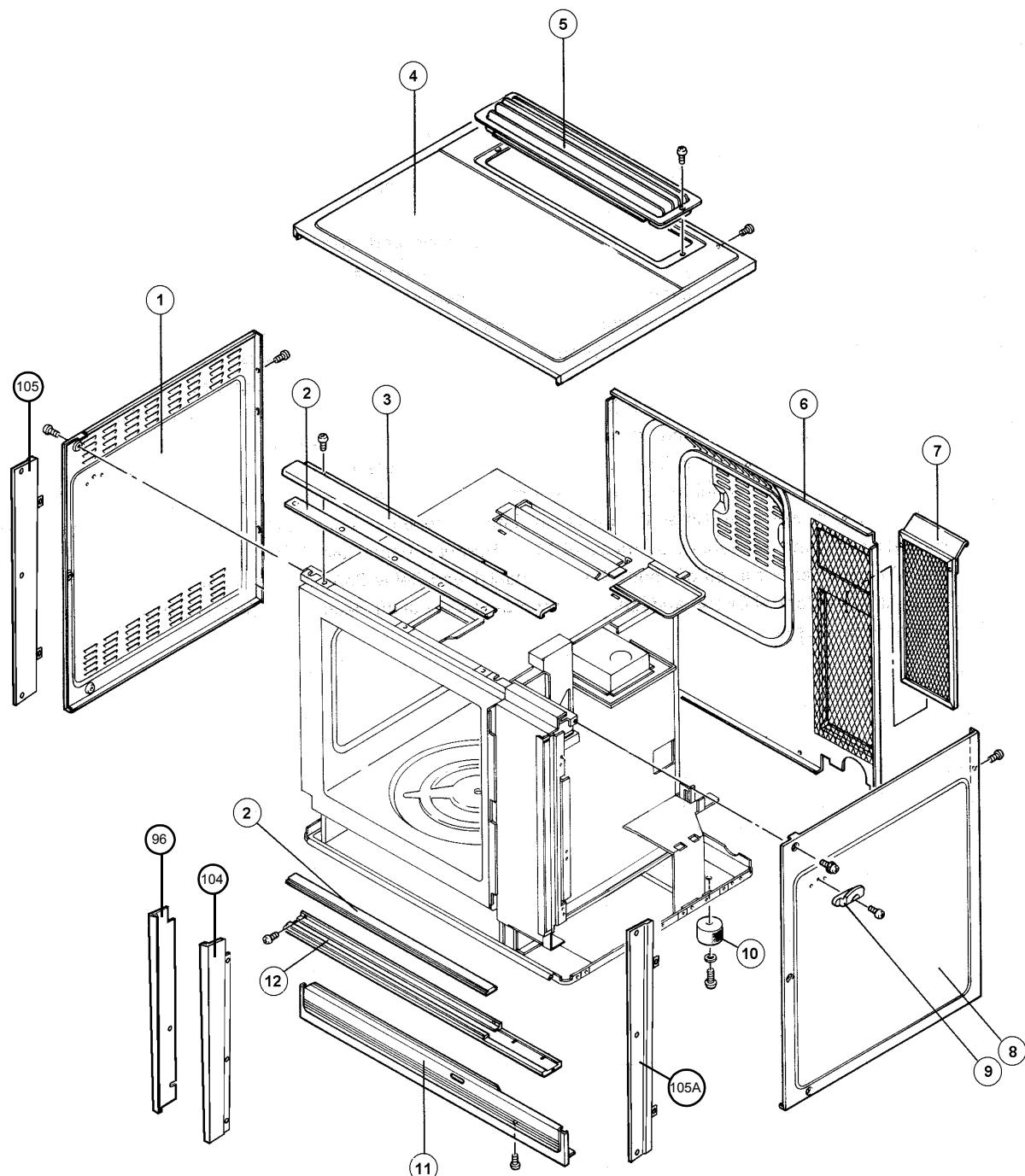
The "Air Filter Blocked" light and "Service" light are triggered by the internal circuitry. If the magnetron overheats, the error code "E:7" is displayed on the front panel, and both the "Air Filter Blocked" and the "Service" indicators will light. Once the magnetron has cooled sufficiently to allow the oven to restart, the "Service" light will remain illuminated until the oven is turned off.

This fault may have been triggered by one of the following causes:

- Air inlet on rear of machine being obstructed.
- High air inlet temperature.
- Slow running cooling fan, jammed turntable or broken gearbox (cooling fan also drives turntable).
- Faulty magnetron overheat 'stat or associated wiring.

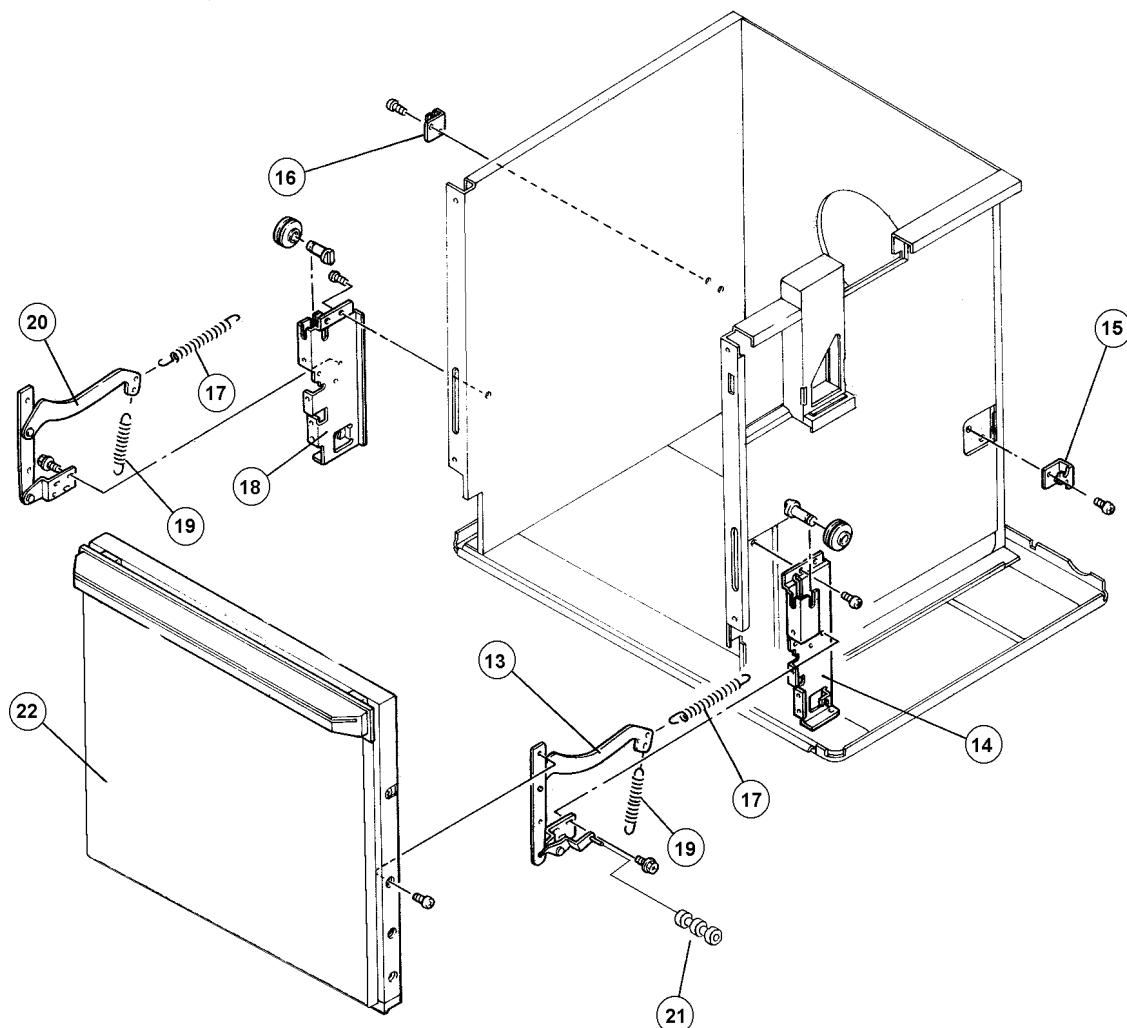
**Note that the customer may not have noticed that the oven displayed "E:7", and so the reported fault may be misleading.**

## Principal components: casework



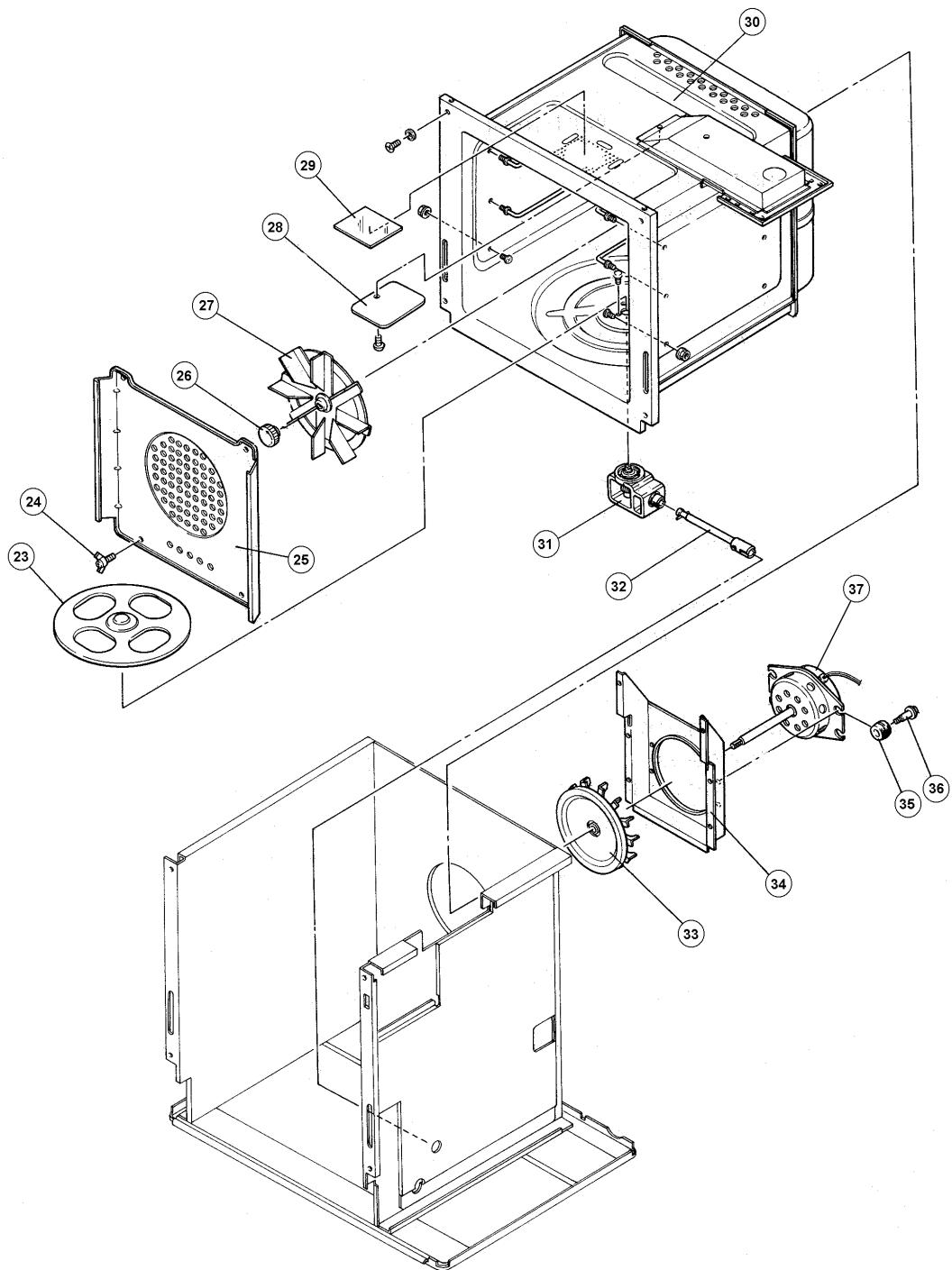
1	Side Panel (L/H)	MC3134	9	Handle Hanger	RCK6319
2	Ferrit	RMC6773	10	Rubber Foot	RMC6104
3	Upper Trim	MC3120X01	11	Front Lower Panel	MC3047
4	Top Plate	RMC6759E	12	Lower Trim	MC3122
5	Exhaust Gallery	RMC73372	96	PCB Retainer LH	40H0083
6	Rear Panel	MC3129	104	PCB Retainer RH	40H0084
7	Air Filter	MC3155	105	Side Trim LH	MC31211
8	Side Panel (R/H)	MC3133	105A	Side Trim RH	MC31212

## Door mechanism



13	Door Stay (R/H)	MC3040
14	Hinge Body	MC30121X02
15	Hook (A)	RMC66171
16	Hook (B)	RMC66172
17	Door Spring (B)	MC3068X01
18	Hinge Body (L/H)	MC30122X01
19	Door Spring (A)	MC3067
20	Door Stay (L/H)	MC3046
21	Microswitch Guide	40H0076
22	Solid Door Assy Black	11H0071
22	Solid Door Assy Silver	11H0031

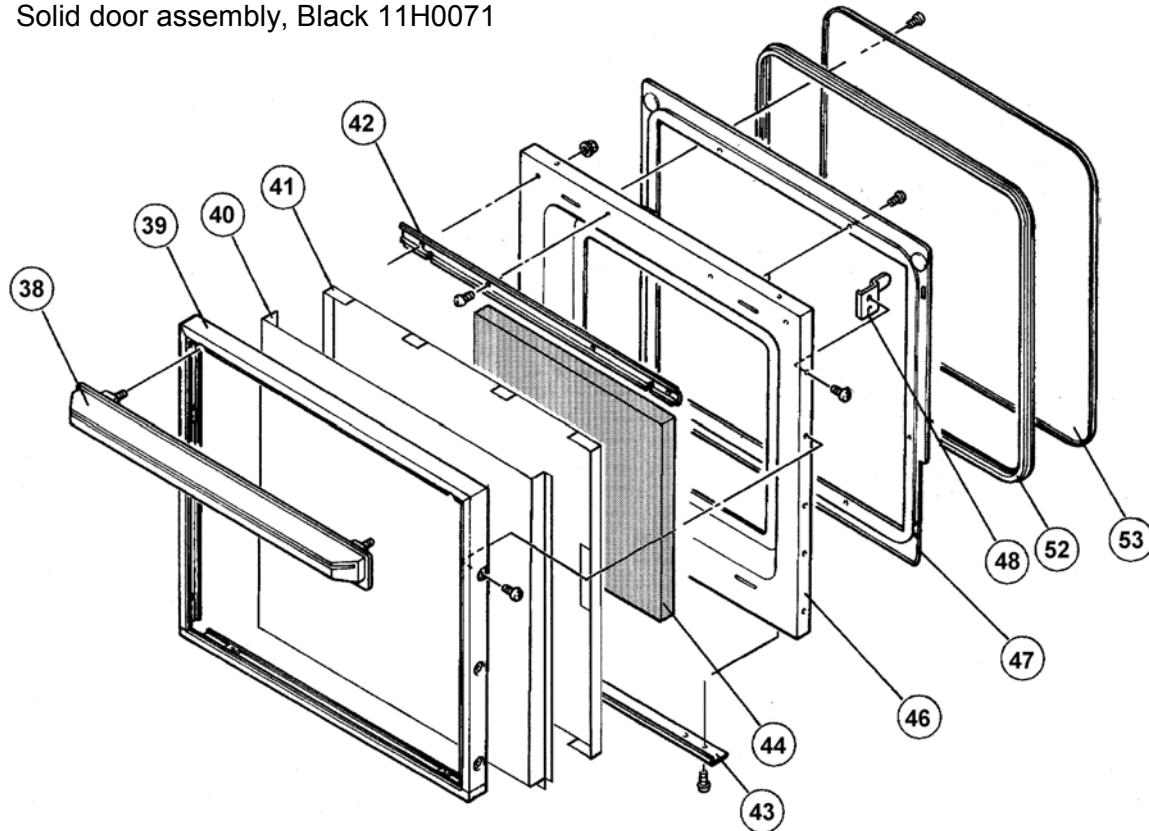
## Oven cavity components and hot air system



23	Turntable Disc	RMC7340X01	31	Gearbox	MC3216
24	Baffle Plate Bolt	CP30326	32	Shaft	RMC7391X01
25	Baffle Plate	MC3018	33	Cooling Fan	RMC7310
26	Fan Fixing Cap	RCK7617	34	Motor Bracket	RMC7307X01
27	Fan	MC3111	35	Cushion Rubber	RCK8273
28	Partition Plate	11H0007	36	Motor Fixing Screw	CP30310
29	Cavity Sealing Glass	RMC7043	37	Hot Air Motor	MC3110
30	Oven Body	MC3013			

## Oven door assembly

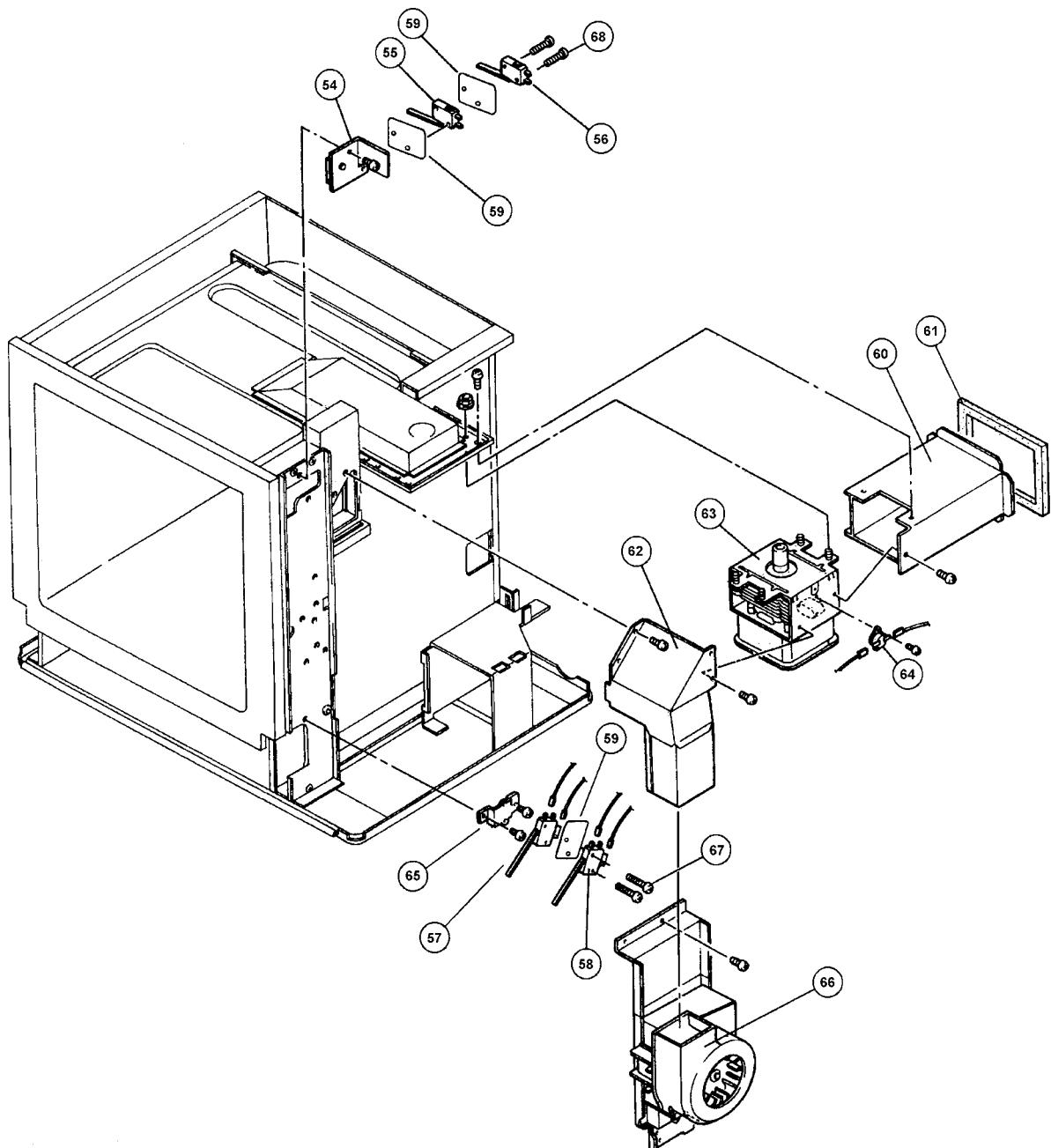
Solid door assembly, Silver 11H0031  
 Solid door assembly, Black 11H0071



22	Solid Door Assy. Silver	11H0031
22	Solid Door Assy Black	11H0071
38	Door Handle Silver	RBR1285048
38	Door Handle Black	RBR12852
39	Door Frame (A) Black	MC30503
40	Door Cover Outer Silver	40H0080
40	Door Cover Outer Black	40H0082
41	Insulation Panel	40H0081
42	Door Reinforcement	RMC70722
43	Door Frame (B)	MC3055
44	Insulation Wrap	32Z0001
46	Door Base Silver	MC3031KX04
47	Door Cover	MC3064
48	Plate - Door Switch	MC3056
52	Packing (B)	MC3065
53	Door Rear Plate	MC3066X01

## Magnetron and door interlock components

Model RMC1003\_EE5  
Model RMC1003\_XE5

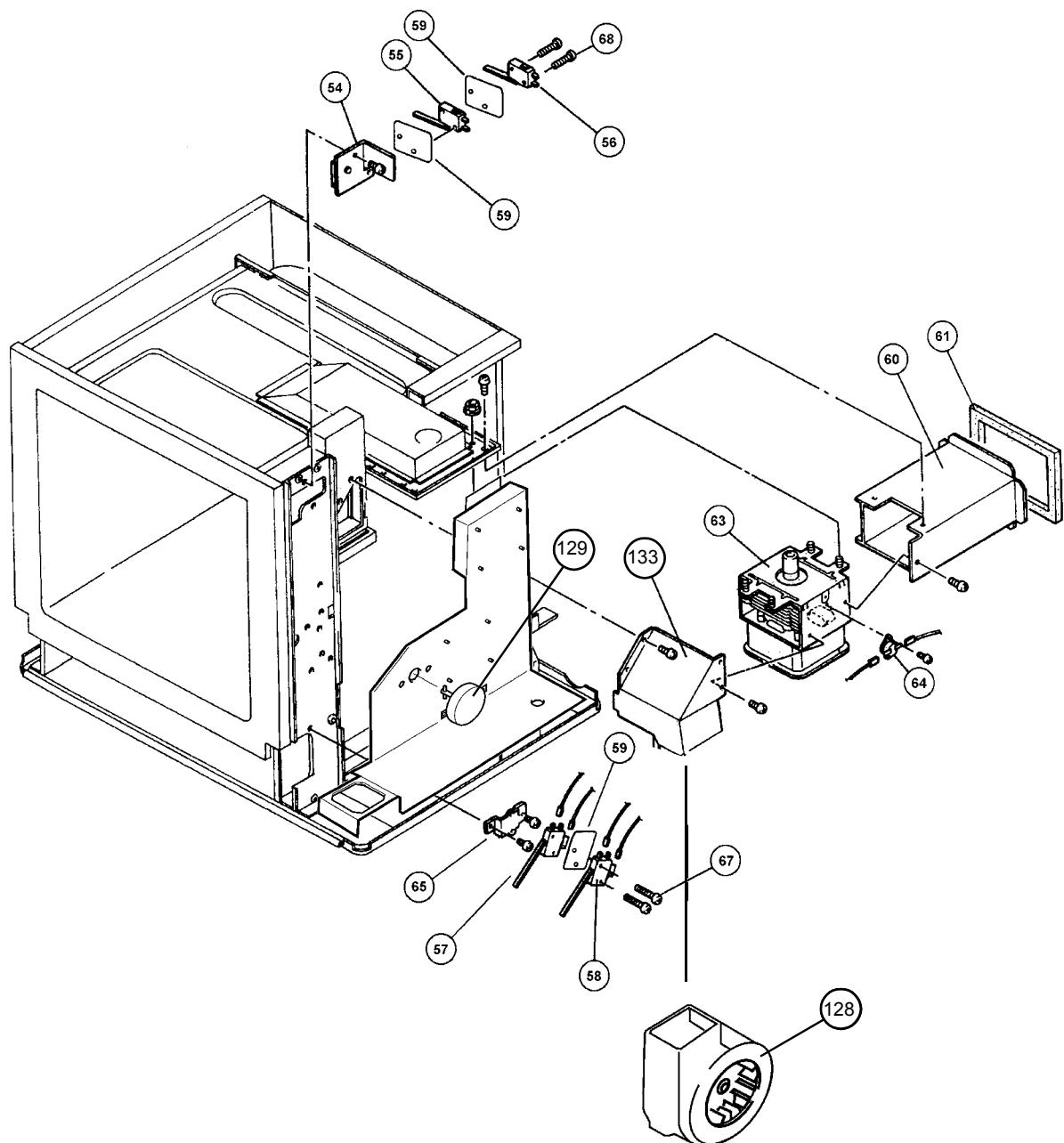


54	Door Switch Bracket	40H0023	62	Inlet Duct	RMC7193X01
55	Primary Microswitch	30Z0240	63	Magnetron	30Z0264
56	Low Voltage Microswitch	30Z0240	64	Magnetron Cut-out	30Z0088
57	Secondary Microswitch	30Z0240	65	Switch Bracket	RMC7101X01
58	Monitor Microswitch	30Z0240	66	Blower Assembly	MC3141
59	Microswitch Insulator	31Z0115	67	M3 x 25 Pan Head Pozi	31Z3093
60	Outlet Duct	MC3037	68	M3 x 30 Pan Head Pozi	31Z3118
61	Foam Tape	31Z0042			

## Magnetron and door interlock components

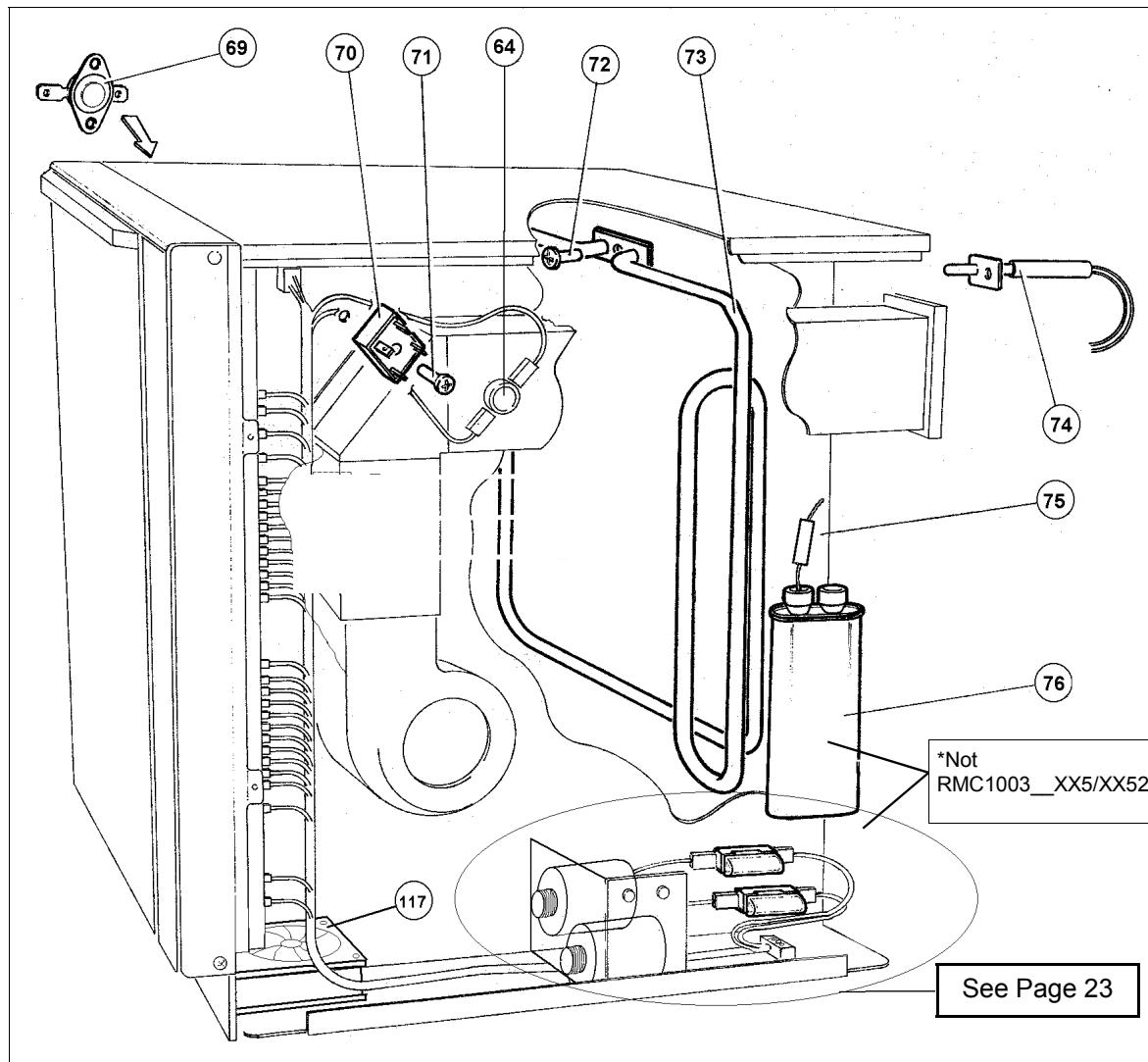
Model RMC1003\_XX5

Model RMC1003\_XX52



54	Door Switch Bracket	40H0023	64	Magnetron Cut-out	30Z0088
55	Primary Microswitch	30Z0240	65	Switch Bracket	RMC7101X01
56	Low Voltage Microswitch	30Z0240	67	M3 x 25 Pan Head Pozi	31Z3093
57	Secondary Microswitch	30Z0240	68	M3 x 30 Pan Head Pozi	31Z3118
59	Microswitch Insulator	31Z0115	128	Cooling Fan 220/240V	30Z1128
60	Outlet Duct	MC3037	128	Cooling Fan 220V	30Z1190
61	Foam Tape	31Z0042	129	Turntable Motor	RMC5055EX
63	Magnetron	30Z0264	133	Inlet Duct	40H0176

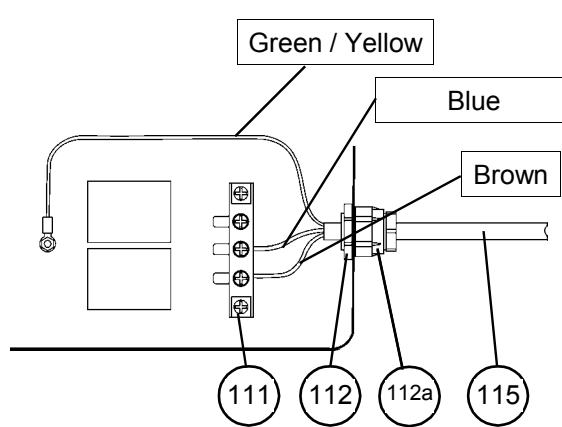
## Major electrical components



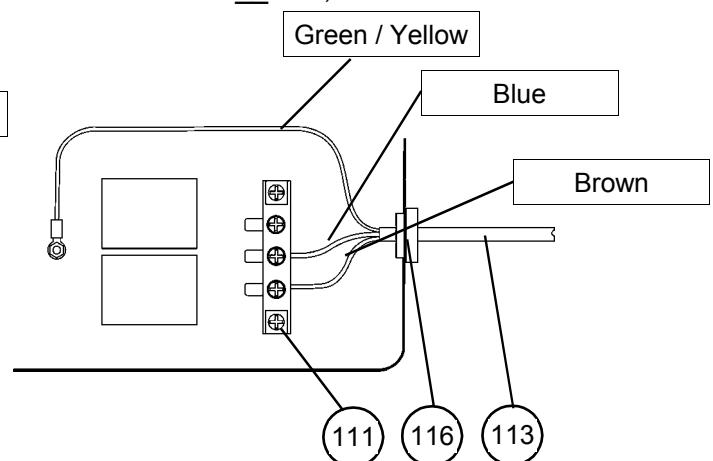
64	Magnetron Overheat Switch	30Z0088	74	Temperature Sensor	50E123
69	Cavity Overheat Switch	30Z1031	75	HV Diode Assembly	11H0010
70	Bridge Rectifier (EE only)	341520	76	HT Capacitor 1.1μ (50Hz)	30Z1077
71	No. 8 Screw	31Z3107	76	HT Capacitor 0.88μ (50Hz)	30Z1075
72	M5 Screw	101825	76	HT Capacitor 0.6μ (60Hz)	30Z0385
73	220V Heating Element	40H0077	76	HT Capacitor 0.74μ (60Hz)	30Z0377
73	240V Heating Element	40H0009	117	Axial Fan, 80mm	310010
73	240V Heating Element	40H0009			

## Input wiring, filters and fuses

Model RMC1003\_XE5, XD



Model RMC1003\_EE5, CD2

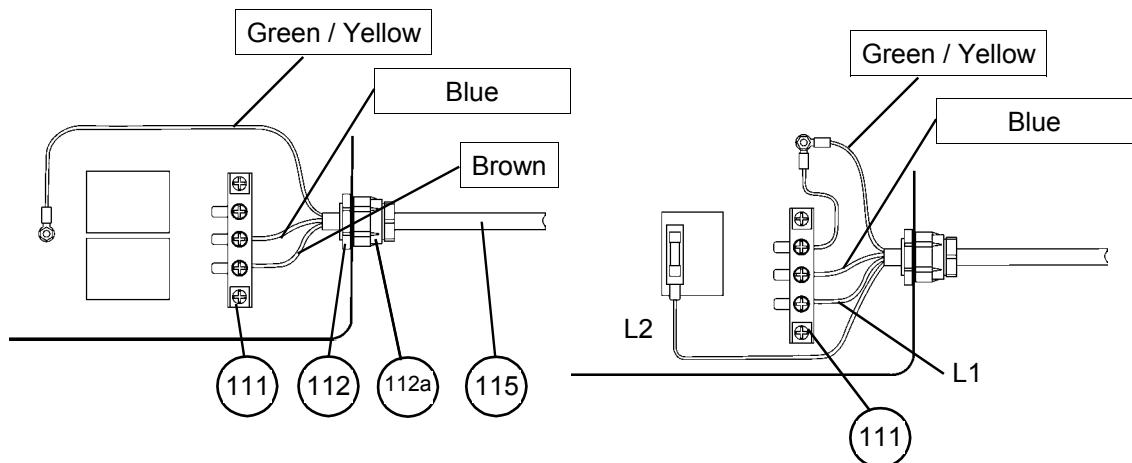


111	Mains Input Block	31Z0328
112	Cable Gland	31Z1070
112A	Cable Gland Nut	31Z1082
113	Input Cable Assembly	31Z0220
115	XE5 Input Cable Assembly	302030
116	Strain Relief Grommet	31Z1036

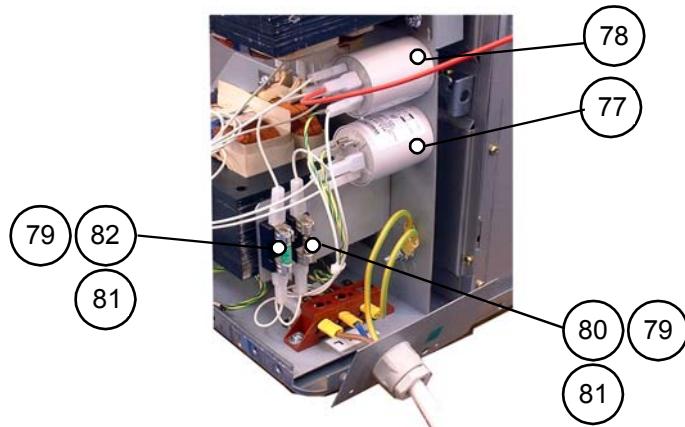


77	Microwave Mains Filter 16A	30Z0997
78	Heater Mains Filter 16A	30Z0997
79	Fuse Cover	20Z1080
80	Fuse 10A HRC	30Z0217
81	Fuse Holder 1"	30Z0231
82	Fuse 13A Anti-surge	30Z0168

## Input wiring details: Model RMC1003\_XX5, XX52

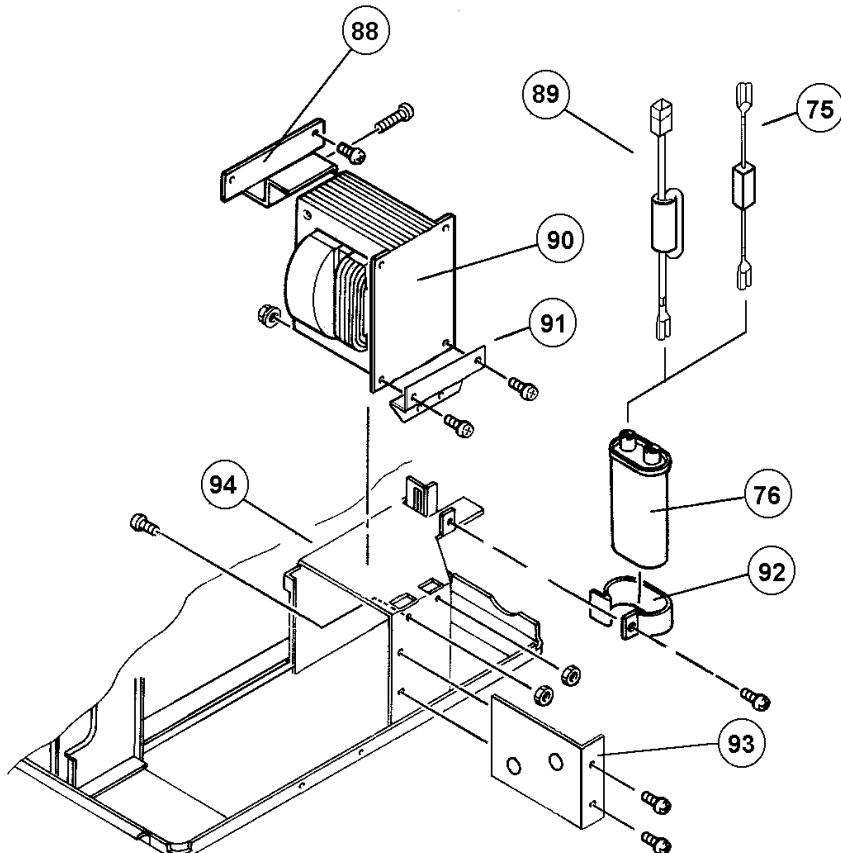


111	Mains Input Block	31Z0328
112	Cable Gland	31Z1070
112A	Cable Gland Nut	31Z1082
113	Input Cable Assembly	31Z0220
115	XE5 Input Cable Assembly	302030
116	Strain Relief Grommet	31Z1036



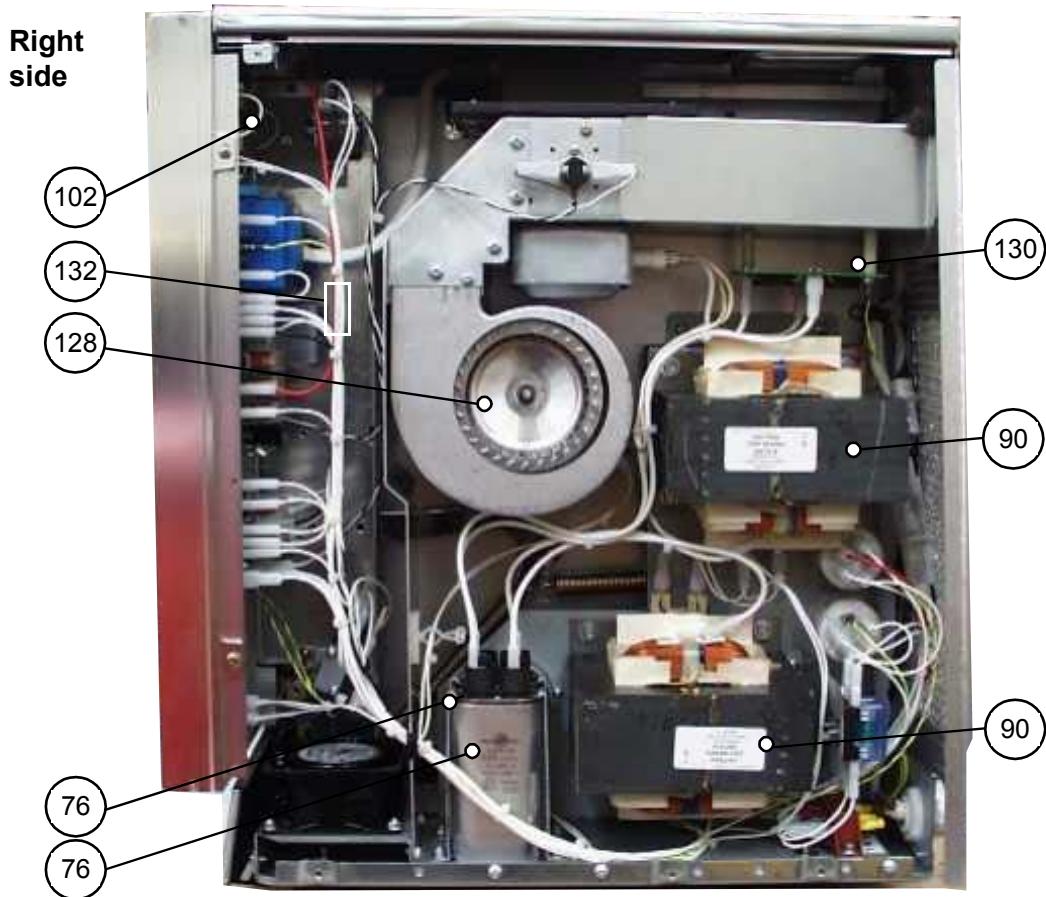
77	Microwave Mains Filter 16A	30Z0997
78	Heater Mains Filter 16A	30Z0997
79	Fuse Cover	20Z1080
80	Fuse 10A HRC	30Z0217
81	Fuse Holder 1"	30Z0231
82	Fuse 13A Anti-surge	30Z0168

## HT Components: RMC1003\_EE5/ XE5



75	HV Diode Assembly	11H0010
76	HT Capacitor 1.1 $\mu$ (50Hz)	30Z1077
76	HT Capacitor 0.88 $\mu$ (50Hz)	30Z1075
76	HT Capacitor 0.6 $\mu$ (60Hz)	30Z0385
76	HT Capacitor 0.74 $\mu$ (60Hz)	30Z0377
88	HT Transformer Top Bracket	MC3127
89	HV Lead Assembly, Ferrit	11H0025
90	HT Transformer 240V	30Z1183
90	HT Transformer 220V	30Z1018
91	HT Transformer Bottom Bracket	40H0070
92	Capacitor Band	RMC7215
93	Filter Bracket	40H0065
94	HT Transformer Support Bracket	MC3024

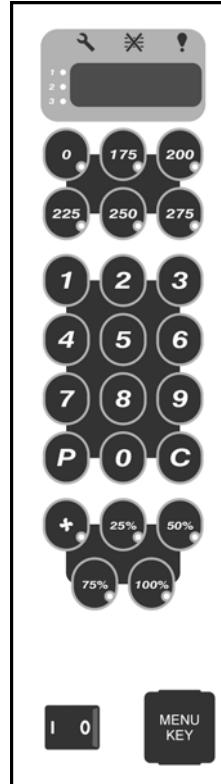
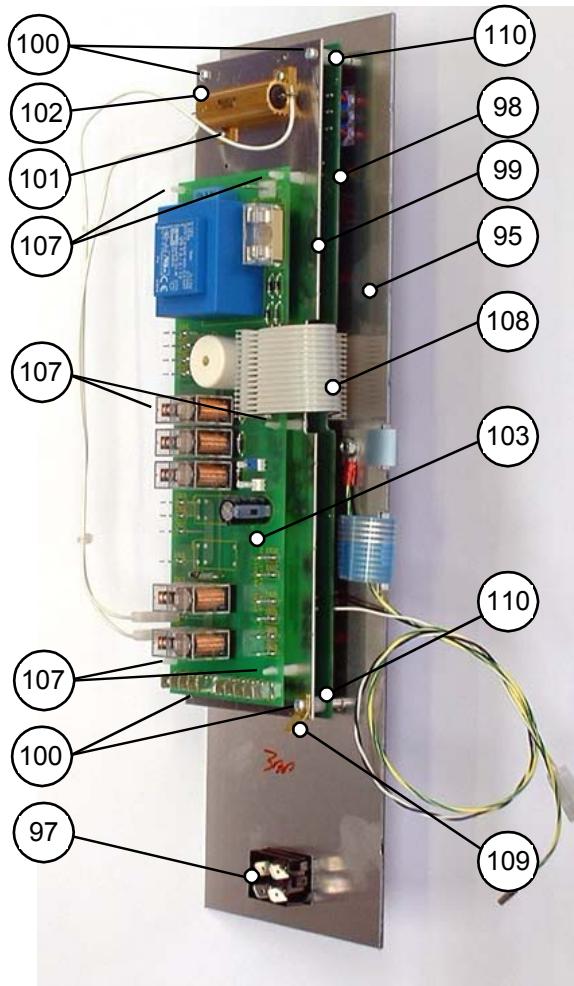
## HT & principle components: Models RMC1003\_XX5, RMC1003\_XX52



76*	HT Capacitor 0.88µF (50Hz)	30Z1075
76*	HT Capacitor 0.6µF (60Hz)	30Z0385
76*	HT Capacitor 0.74µF (60Hz)	30Z0377
90	Transformer 220V 50/ 60Hz	30Z1018
90	Transformer 220V 60Hz	30Z1192
90	Transformer 240V 50/ 60Hz	30Z1183
90	Transformer 240V 60Hz	30Z1191
102	Resistor 470R 50W (Gold)	30Z0283
128	Cooling Fan 220/240V 50Hz	30Z1128
128	Cooling Fan 220V 60Hz	30Z1190
130	Diode Board	11H0058
132	Heater Relay	30Z0986

\*Note: 50Hz models use 2x 0.88µF Capacitors  
 60Hz models use 1x 0.6µF and 1x 0.74µF Capacitors

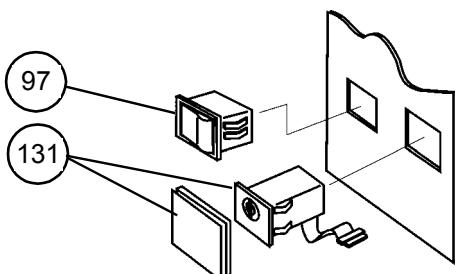
## Electronic control panel assembly



Membrane Panel  
Menukey  
(Blue)



Membrane Panel  
Starbucks  
(Red/ Grey)

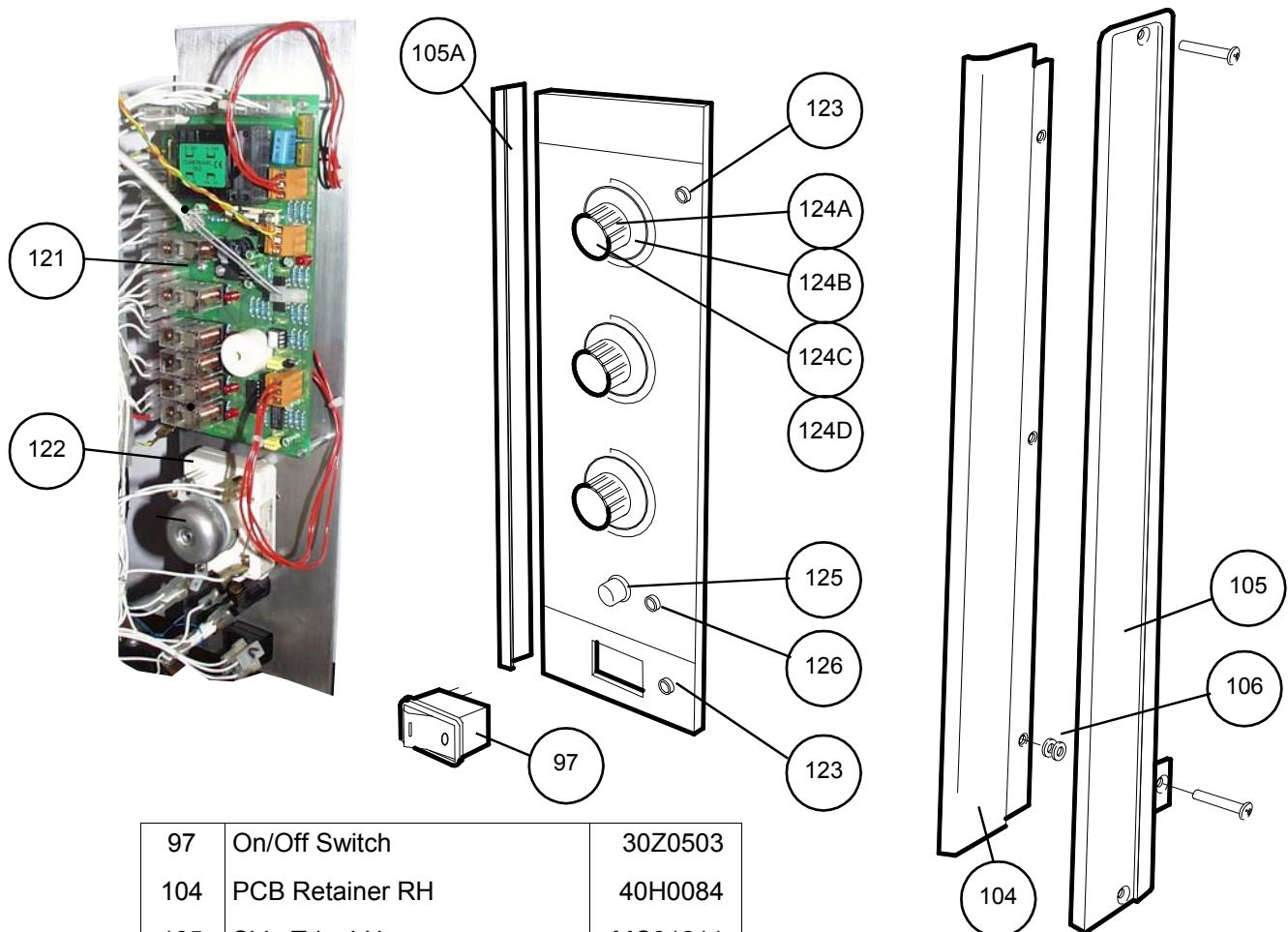


Model	Membrane Assy	Logic PCB
EE5, XE5, XX5	11H0060	11C0285
XX5 Starbucks	11H0024	11C0285
EE5, XE5, XX5 Menukey	11H0067	11C0066
XX5 Locare	11H0073	11C0066

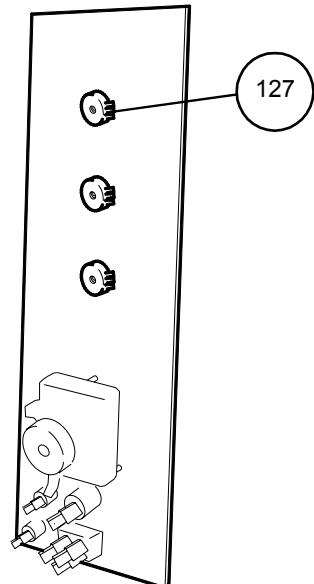
95	Membrane Assy	See Table
97	On/Off Switch	30Z0503
98	Logic Assy.	See Table
99	Support Shield	40H0075
100	M3 x 5 Screw	31Z3106
101	No. 4 x 3/8" Screw	31Z3112
102	470R 50W Resistor	30Z0283

103	Relay Assy.	11C0286
107	PCB Stand-off	31Z7010
108	15 Way Ribbon Connector	11Z0298
109	Single 0.25" Blade Tag	309610
110	M3 Nylon Support	31Z0206
131	Menukey Assembly	10C0148

## Manual control panel assembly



97	On/Off Switch	30Z0503
104	PCB Retainer RH	40H0084
105	Side Trim LH	MC31211
105A	Side Trim RH	MC31212
106	M5 Flat Washer	31Z5004
121	PCB Assembly	11H0027
122	Timer	30Z0991
123	Amber Neon	316031
124A	Control Knob Black	313020
124B	Control Knob Skirt Red	313160
124B	Control Knob Skirt Blue	31Z1216
124C	Control Knob Cap Red	313220
124C	Control Knob Cap Blue	31Z1217
124D	Control Knob Shaft Adaptor	313030
124E	Control Knob Assy Black/Red	11C0173
124E	Control Knob Assy Blue	11C0406
125	Pushbutton (Start)	31Z0349
126	Red Neon	316030
127	Potentiometer	40C0892



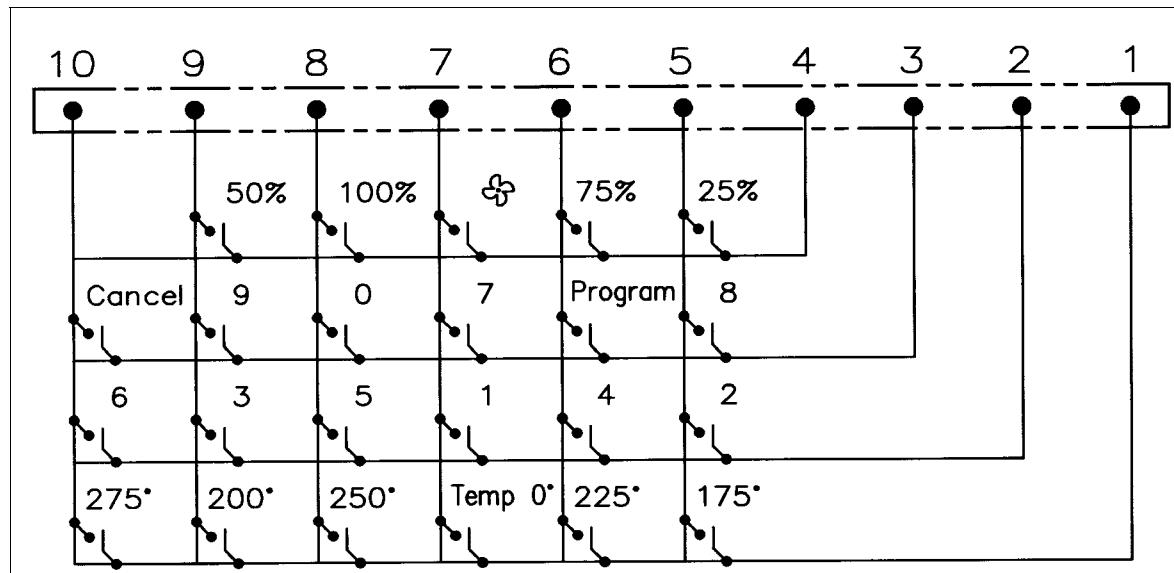
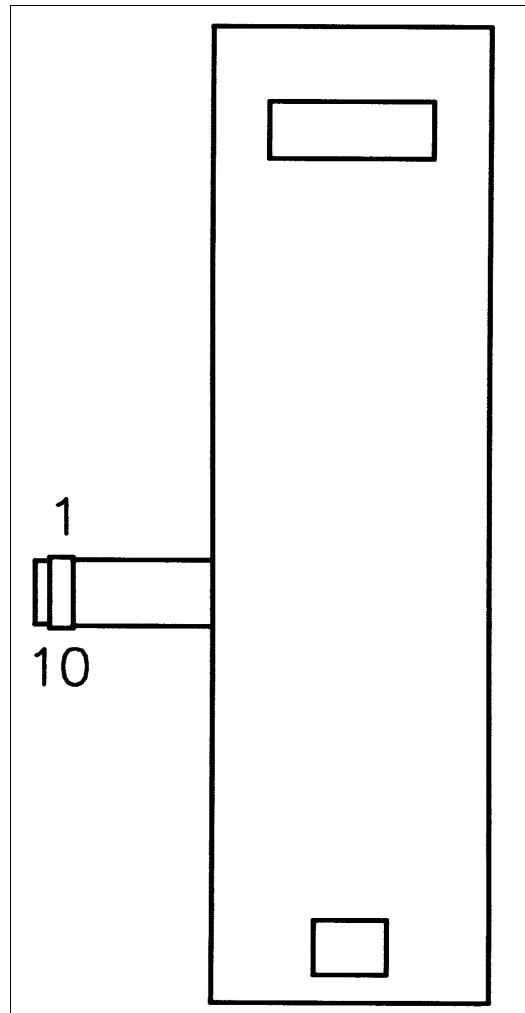
Control Board not shown for clarity

## Membrane panel circuit

### You will need:

## A Digital Multi-meter (D.M.M.)

1. Isolate the oven from the mains supply.
2. Remove the Logic Assembly from the Control Panel Housing.
3. Unplug the membrane “tail” from the Logic PCB Assy.
4. Using a D.M.M., check for continuity between the correct terminals when the pads are pressed.
5. When the panel has been tested, re-assemble and re-test the control housing.



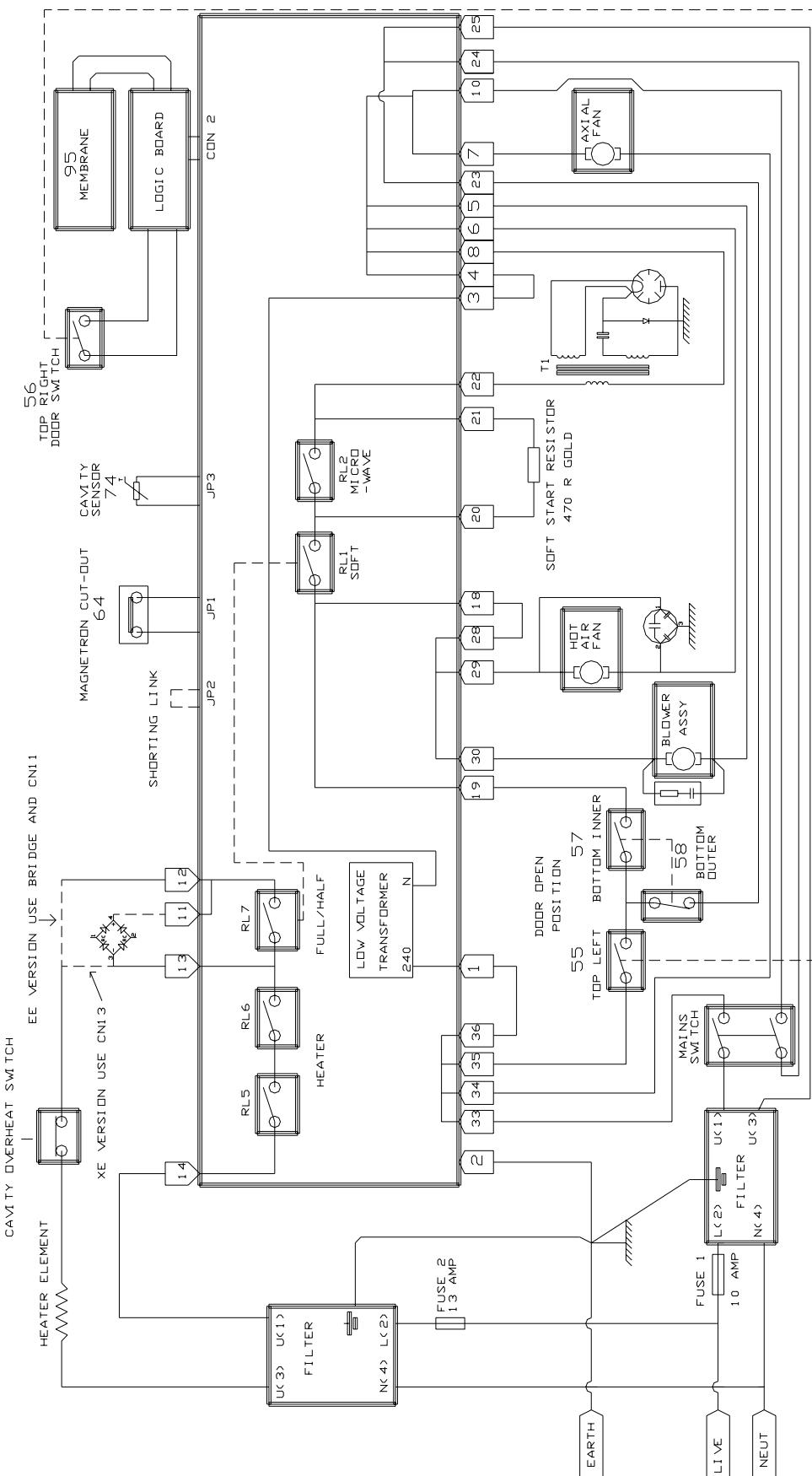
## Part number identification chart 1

1	SIDE PANEL (L/H)	MC3134	41	INSULATION PANEL	40H0081
2	FERRITE	RMC6773	42	DOOR REINFORCEMENT	RMC70722
3	UPPER TRIM	MC3120X01	43	DOOR FRAME (B)	MC3055
4	TOP PLATE	RMC6759E	44	INSULATION WRAP	32Z0001
5	EXHAUST GALLERY	RMC73372	46	DOOR BASE SILVER	MC3031KX04
6	REAR PANEL	MC3129	47	DOOR COVER	MC3064
7	GREASE FILTER	MC3155	48	PLATE - DOOR SWITCH	MC3056
8	SIDE PANEL (R/H)	MC3133	52	PACKING (B)	MC3065
9	HANDLE HANGER	RCK6319	53	DOOR REAR PLATE	MC3066X01
10	RUBBER FOOT	RMC6104	54	DOOR SWITCH BRACKET	40H0023
11	FRONT LOWER PANEL	MC3047	55	PRIMARY MICROSWITCH	30Z0240
12	LOWER TRIM	MC3122	56	LOW VOLTAGE MICROSWITCH	
13	DOOR STAY (R/H)	MC3040	57	SECONDARY MICROSWITCH	
14	HINGE BODY	MC30121X02	58	MONITOR MICROSWITCH	
15	HOOK (A)	RMC66171	59	MICROSWITCH INSULATOR	31Z0115
16	HOOK (B)	RMC66172	60	OUTLET DUCT	MC3037
17	DOOR SPRING (B)	MC3068X01	61	FOAM TAPE	31Z0042
18	HINGE BODY (L/H)	MC30122X01	62	INLET DUCT	RMC7193X01
19	DOOR SPRING (A)	MC3067	63	MAGNETRON	30Z0264
20	DOOR STAY (L/H)	MC3046	64	MAGNETRON CUT-OUT	30Z0088
21	MICROSWITCH GUIDE	40H0076	65	SWITCH BRACKET	RMC7101X01
22	SOLID DOOR ASSY SILVER	11H0031	66	BLOWER ASSEMBLY (NOT RMC1003_XX5, XX52)	MC3141
22	SOLID DOOR ASSY BLACK	11H0071	67	M3 X 25 PAN HEAD POZI	31Z3093
23	TURNTABLE DISC	RMC7340X01	68	M3 X 30 PAN HEAD POZI	31Z3118
24	BAFFLE PLATE BOLT	CP30326	69	CAVITY OVERHEAT SWITCH	30Z1031
25	BAFFLE PLATE	MC3018	70	BRIDGE RECTIFIER (EE ONLY)	341520
26	FAN FIXING CAP	RCK7617	71	N0. 8 SCREW	31Z3107
27	FAN	MC3111	72	M5 SCREW	101825
28	PARTITION PLATE	11H0007	73	240V HEATING ELEMENT 220V HEATING ELEMENT	40H0009 40H0077
29	CAVITY SEALING GLASS	RMC7043	74	TEMPERATURE SENSOR	50E123
30	OVEN BODY	MC3013	75	HV DIODE ASSEMBLY	11H0010
31	GEARBOX	MC3216	76	HT Capacitor 1.1 $\mu$ (50Hz)	30Z1077
32	SHAFT	RMC7391X01	76	HT Capacitor 0.88 $\mu$ (50Hz)	30Z1075
33	COOLING FAN	RMC7310	76	HT Capacitor 0.6 $\mu$ (60Hz)	30Z0385
34	MOTOR BRACKET	RMC7307X01	76	HT Capacitor 0.74 $\mu$ (60Hz)	30Z0377
35	CUSHION RUBBER	RCK8273			
36	MOTOR FIXING SCREW	CP30310			
37	HOT AIR MOTOR	MC3110			
38	DOOR HANDLE BLACK	RBR12852			
38	DOOR HANDLE SILVER	RBR1285048			
39	DOOR FRAME (A) BLACK	MC30503			
40	DOOR OUTER BLACK	40H0080			
40	DOOR OUTER SILVER	40H0082			

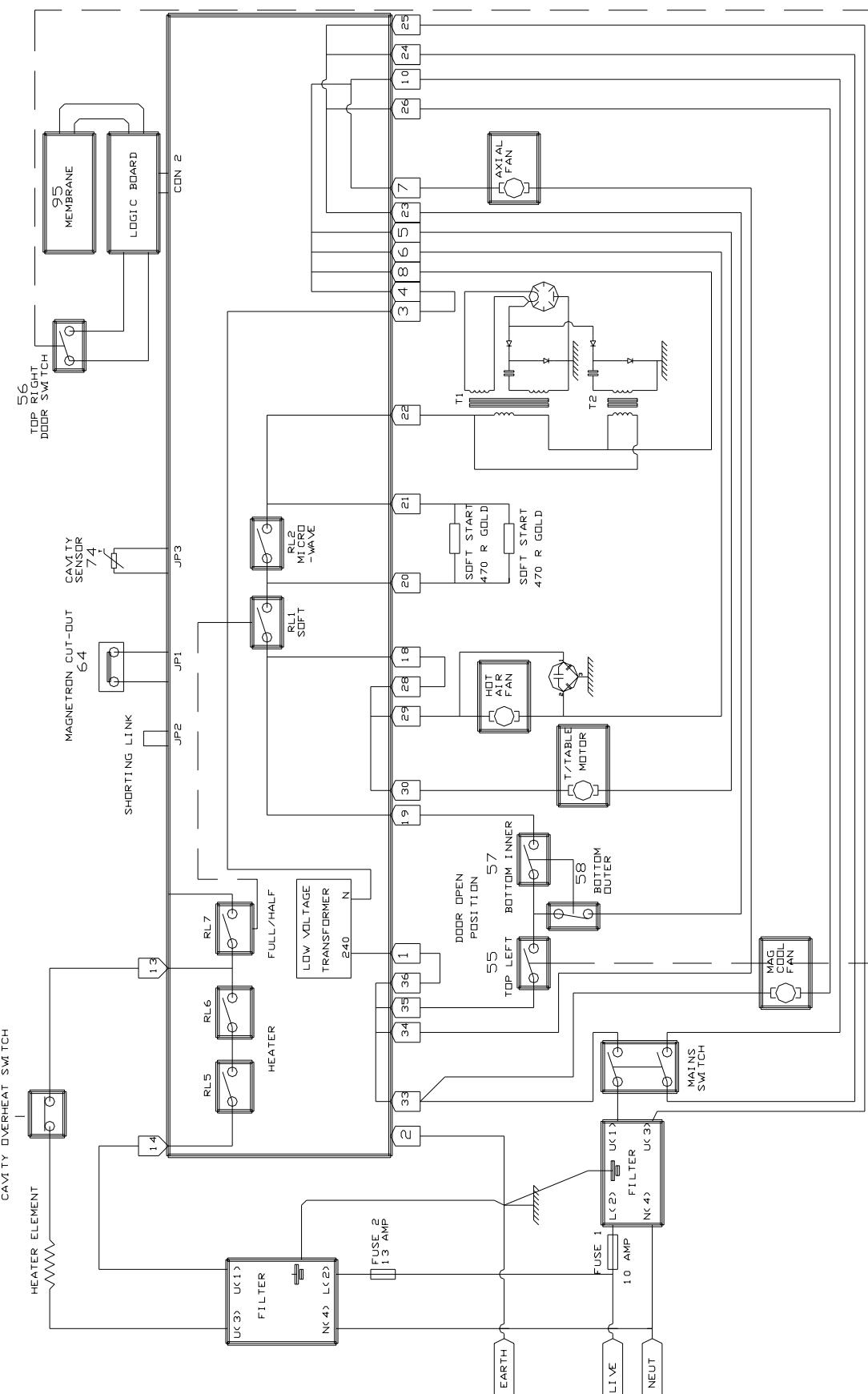
## Part number identification chart 2

77	M'WAVE MAINS FILTER 16A	30Z0997	117	80mm Axial Fan	310010
78	HEATER MAINS FILTER 16A	30Z0997	121	PCB Assembly	11H0027
79	FUSE COVER	20Z1080	122	Timer	30Z0991
80	FUSE 10A HRC	30Z0217	123	Neon Amber	316031
81	FUSE HOLDER 1"	30Z0231	124A	Control Knob Black	313020
82	FUSE 13A ANTI-SURGE	30Z0168	124B	Control Knob Skirt Red	313160
88	HT TRANSFORMER TOP	MC3127	124B	Control Knob Skirt Blue	31Z1216
89	HV LEAD ASSEMBLY	11H0025	124C	Control Knob Cap Red	313220
90	Transformer 220V 50/ 60Hz	30Z1018	124C	Control Knob Cap Blue	31Z1217
90	Transformer 220V 60Hz	30Z1192	124D	Control Knob Shaft Adapter	313030
90	Transformer 240V 50/ 60Hz	30Z1183	124E	Control Knob Assy Black/Red	11C0173
90	Transformer 240V 60Hz	30Z1191	124E	Control Knob Assy Blue	11C0406
91	HT TRANSFORMER BOTTOM	40H0070	125	Pushbutton (Start)	31Z0349
92	CAPACITOR BAND	RMC7215	126	Neon Red	316030
93	FILTER BRACKET	40H0065	127	Potentiometer	40C0892
94	HT TRANSFORMER SUPPORT BRACKET	MC3024	128	Cooling Fan 220/240V 50Hz	30Z1128
95	MEMBRANE ASSEMBLY	SEE TABLE	128	Cooling Fan 220V 60Hz	30Z1190
96	PCB RETAINER LH	40H0083	129	Turntable Motor	RMC5055EX
97	ON/OFF SWITCH	30Z0503	130	Diode Board	11H0058
98	LOGIC ASSY.	SEE TABLE	131	Menukey Assembly	10C0148
99	SUPPORT SHIELD	40H0075	132	Heater Relay	30Z0986
100	M3 X 5 SCREW	31Z3106	133	Inlet Duct	40H0176
101	NO. 4 X 3/8" SCREW	31Z3112		Model	Membrane Assembly
102	470R 50W GOLD RESISTOR	30Z0283	95	RMC1003_EE5, XE5, XX5_, Haari	11H0060
103	RELAY ASSY.	11C0286	95	RMC1003_XX5 Starbucks	11H0024
104	PCB RETAINER RH	40H0084	95	RMC1003_EE5, XE5, XX5_ Menukey	11H0067
105	SIDE TRIM LH	MC31211	95	RMC1003_XX5 Locare	11H0073
105A	SIDE TRIM RH	MC31212		Model	Logic PCB
106	M4 FLAT WASHER	31Z5004	98	RMC1003_EE5, XE5, XX5_, Haari	11C0285
107	PCB STAND-OFF	31Z7010	98	RMC1003_XX5 Starbucks	11C0285
108	15 WAY RIBBON CONNECTOR	11Z0298	98	RMC1003_EE5, XE5, XX5_ Menukey	11C0066
109	SINGLE 0.25" CONNECTOR	309610	98	RMC1003_XX5 Locaire	11C0066
110	M3 NYLON SUPPORT	31Z0206			
111	MAINS INPUT BLOCK	31Z0328			
112	CABLE GLAND	31Z1070			
112A	CABLE GLAND NUT	31Z1082			
113	INPUT CABLE ASSEMBLY	31Z0220			
115	XE5 INPUT CABLE ASSEMBLY	302030			
116	STRAIN RELIEF GROMMET	31Z1036			

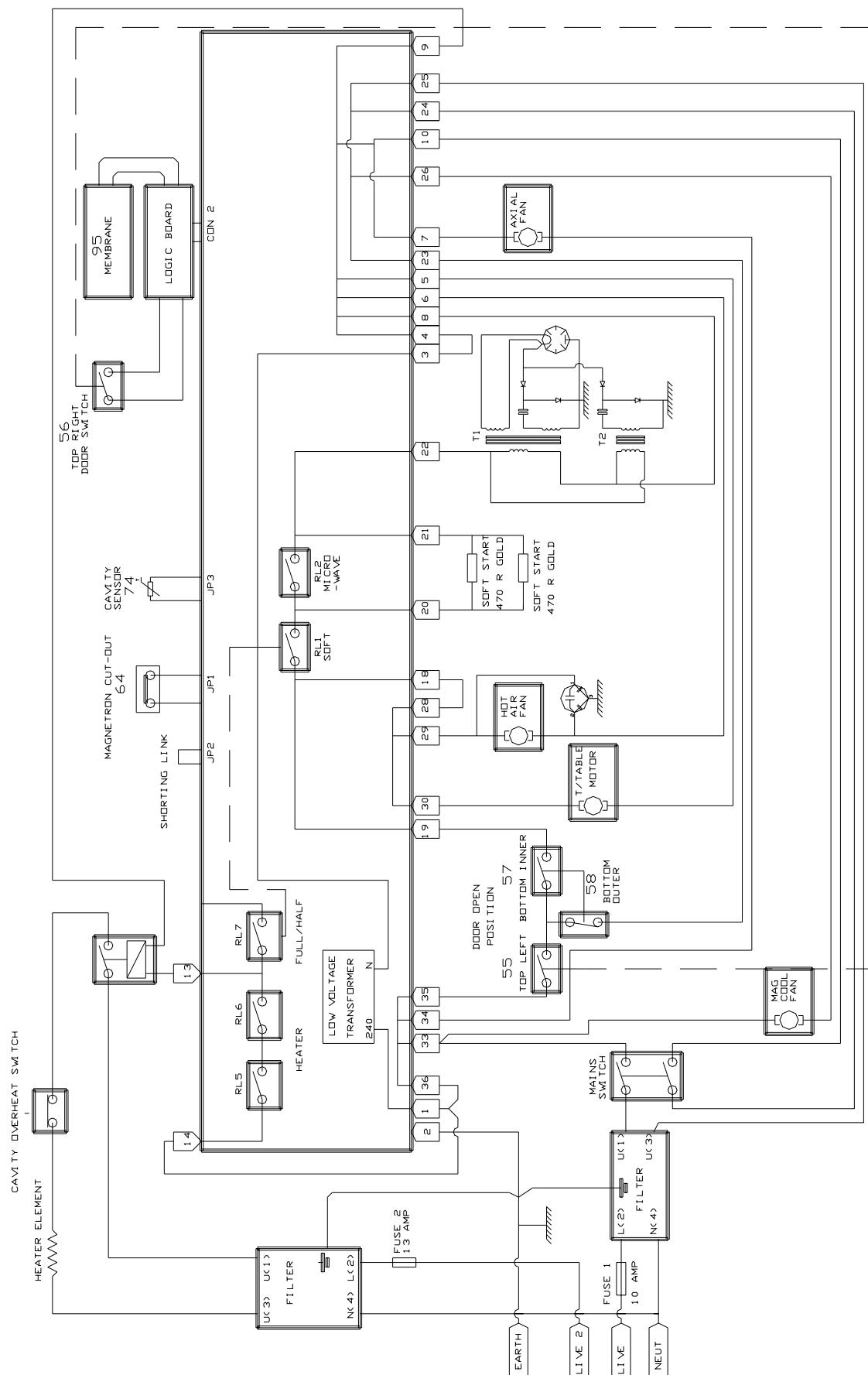
## Circuit diagram: RMC 1003\_5 EE & RMC 1003\_XE



## Circuit diagram: RMC 1003\_XX5 (Single Phase)

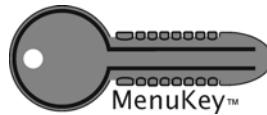


## Circuit diagram: RMC 1003\_\_XX52 (Twin Phase)



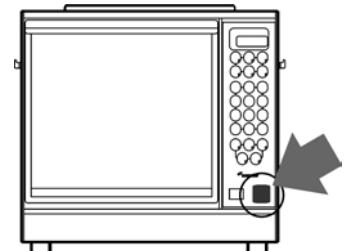
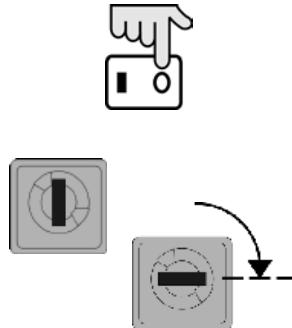
## APPENDIX 1: MenuKey Download Procedure

The MenuKey™ System automatically changes all the cooking programs on the numbered icon pads with the turn of a key.



### To change the menus on the oven:

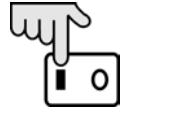
- 1 Ensure the power switch is **off**.
- 2 Lift the MenuKey cover in the front panel of the oven and put the key in the keyhole. Turn the key clockwise to the stop (  $\frac{1}{4}$  turn ).  
**Do not remove the key** at this stage.



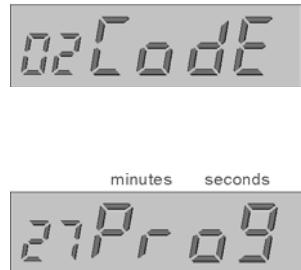
- 3 Switch the power switch **on**. The oven will now go through the program download sequence by displaying the following:

The Key Code

example: Key C02



minutes      seconds



The number of programs and each program number on the key.

example: 27 Programs



minutes      seconds



#### EPS - FAIL - REDO

#### External Program

#### System ERROR.

If the key is removed before the download is complete or the process is interrupted the display shows "EPS" then "FAIL" then "REDO". Switch the oven off and begin the MenuKey download again.

When the display shows 00:00 remove the key and close the cover. The oven is now ready to use with the new programs.

---

### To confirm the download is successful

Switch off the oven.

Switch on and the display briefly will show the following:

1. The new key code
2. 00:00 (oven ready to use)

If the download is not successful the key number will not be displayed and if the program pads are pressed an E3 error will display.

## APPENDIX 2: Cleaning Procedure

**For the oven to operate at peak efficiency, the cavity, door and air filters must be kept clean.**

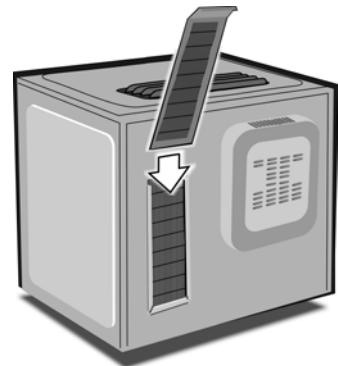
A daily cleaning routine will ensure that you comply with the required hygiene standards and will help to maintain and prolong the efficiency of your oven.

Follow the SAFETY INSTRUCTIONS at the beginning of this manual.

- **ALWAYS switch off at the electrical supply and allow oven to cool for at least 20 minutes before cleaning**
- **As required, remove carousel and wipe out spillages with disposable paper wipes**
- **NEVER use steel wool, knives or harsh abrasives on any part of the oven**

**As with all electrical appliances, it is wise to have the electrical connections inspected periodically.**

1. Remove the air filter from the rear panel of the oven by sliding the filter up and out of the slots.
2. Wash in clean, warm soapy water, rinse and pat dry. Slide back into position through slots.



**DO NOT USE THE OVEN WITHOUT A CLEAN AIR FILTER IN POSITION**

### Cleaning the oven cavity and door

1. Remove trays, racks and the rear baffle plate ( undo the four wing nuts ), turntable and turntable disc. Clean using non-caustic oven cleaner.
2. Remove food particles from between the inside edge of the door and the front of the oven floor using a clean, dry brush. ( Location A )
3. Apply non-caustic oven cleaner to interior surfaces except door seals. Leave for the recommended time. Wash off using a clean cloth and plenty of clean, warm water. Dry using a fresh, clean cloth.
4. Wipe hinges with a clean, damp cloth.  
DO NOT apply lubricating oil.
5. Wipe door seals carefully with a clean damp cloth. Examine for signs of wear or damage.
6. Replace baffle plates and tighten wing nuts.



### Cleaning the control panel and exterior surfaces

Wipe down regularly with a damp cloth.

### Hints and Tips for stubborn stains in the oven cavity

1. Switch on oven with microwave power only (without heat).
2. Place a container of water (1.5 litres) into the centre of the oven cavity.
3. Set microwave power to 100%.
4. Set timer to 30 minutes and press start button.

At end of steam cycle, wipe out cavity with a clean cloth.

## Manual corrections and modifications

Whilst every effort has been made to ensure that the information contained in this manual is accurate and complete, if you believe that an error has been made, or if you have any suggestions for how the manual could be improved, please fill in and return this form. A review of any forms returned will be made on a regular basis, and the manual will be updated if required.

Name	
Address	
Page on which error occurs (if applicable) - <b>Mealstream 401 Series</b>	
Description of error	
Suggestion for improvement to manual	
<p>Please return this form to:</p> <p>Quality Department Merrychef Ltd Station Road West Ash Vale Aldershot Hampshire GU12 5XA</p>	
Or Fax it on:	+44 (0) 1252 371007
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